

CERTIFIED MAIL 7020 0090 0000 0566 3213

October 27, 2022

Air and Radiation Division U. S. Environmental Protection Agency, Region V 77 West Jackson Boulevard, Chicago, IL 60604

Re: Submittal of U. S. Steel – Minntac and Keetac Compliance Reports per the Requirements of 40 CFR Part 52.1235(e)(5) through (7) – Taconite Regional Haze FIP

U. S. Steel – Keetac (Keetac)

Keetac utilizes Ametek Model 920 analyzers to measure NOx and SO₂ (Serial Number AE-920-10086-1).

Keetac submits quarterly excess emission reports to the Minnesota Pollution Control Agency. Therefore, to fulfill the requirements of the excess emissions and monitoring system performance reports, a copy of the quarterly excess emissions report for the 3rd quarter is included in this submittal. Where EPA's requirements per the regulation differ from Minnesota's requirements, this information is also being included.

Any periods of startup and shut down are reported in Section 5 of the DRF-1 Form included in this submittal. There were no deviations during this reporting period.

The emission limitation for SO2 is 225 lbs/hr - 30 day rolling average. There were no deviations associated with the emission limit.

The emission limitation for NOx became effective on September 8, 2019 and is 1.5 lbs/MMBtu based on a 30-day rolling average. However, for any 30 or more consecutive days when only natural gas is used, a limit of 1.2 lbs/MMBtu applies. Refer to attachment 1.

The last CEMS CGA was conducted on September 15, 2022 and is included in this submittal. The last CEMS RATA was conducted on March 22, 2022 and was previously provided.

U. S. Steel – Minntac (Minntac)

Minntac utilizes Ametek Model 920 analyzers to measure NOx and SO₂. The table below outlines the serial numbers for each of the units:

Line 3	AE-920-10086-1
Line 4	AE-920-10086-2
Line 5	AE-920-10086-3
Line 6	ZA-920-10336-1

Minntac submits quarterly excess emission reports to the Minnesota Pollution Control Agency. Therefore, to fulfill the requirements of the excess emissions and monitoring system performance reports, a copy of the quarterly excess emissions report for the 3rd quarter is included in this submittal. Where EPA's requirements per the regulation differ from Minnesota's requirements, this information is also being included.

Any periods of startup and shut down are reported in Section 5 of the DRF-1 Form included in this submittal. There were no deviations during this reporting period.

The emission limitation for SO_2 is a 30-day rolling average aggregate limit for indurating lines 3-7 of 498 lbs/hr when all lines are producing flux pellets, 630 lbs/hr when producing acid pellets or using the equation in 40 CFR 52.1235(b)(2)(iii) when the 30 day period includes both acid and flux pellet production. There were no deviations associated with the emission limit.

The emission limitation for NOx on Lines 3-7 is 1.6 lbs/MMBtu averaged across Lines 3-7 and based on a 30-day rolling average. There were no deviations associated with the emission limit.

The latest CEMS RATA was conducted on Lines 3-7 on May 24 – June 3, 2022. This report was submitted separately. The last CGAs were performed on August 23rd and 24th of 2022 and are included in this submittal.

If you should require any additional information, please contact me at <u>scampbell@uss.com</u> or 218-778-8684.

Sincerely,

Stephani Campbell

Environmental Control

Ateshane Campbell



U. S. Steel Corporation Minnesota Ore Operations P.O. Box 217 Keewatin, MN 55753

CERTIFIED MAIL 0721 0350 0002 0965 3308

October 27, 2022

Air Quality Compliance Tracking Coordinator Minnesota Pollution Control Agency 520 Lafayette Road North St. Paul, MN 55155-4194

Re: U. S. Steel – Keetac Administrative Order by Consent Quarterly Continuous Monitoring System Deviation Report

Dear Supervisor:

Enclosed with this letter is U. S. Steel – Keetac's (Keetac) Quarterly Continuous Emission Monitoring System Deviation report for the 3rd quarter of 2022. The Continuous Emission Monitoring System (CEMS) was certified on Keetac's Waste Gas Stack on November 6th, 2008. The CEMS was installed as a part of Keetac's Administrative Order by Consent with the State of Minnesota effective September 27th, 2007.

Deviations associated with Emission Limits

There were no deviations associated with emission limits.

Deviations associated with Monitor Downtime

There were zero instances of monitor downtime that affected either NO_x or SO_2 . The individual downtime duration and cause is listed in the monitor downtime section of this report.

Deviations associated with Monitor Bypass

Keetac utilizes a grate/kiln system for pelletizing taconite. Although this is an extremely hot process (with temperatures exceed 2500 °F in the kiln), the equipment is designed to withstand the high temperatures and will do so during normal operation. However, the grate is very susceptible to heat damage during upset conditions or if stopped for any reason while it is hot. To prevent equipment damage and heat related safety issues during these situations, large amounts of heat must be released from the grate as soon as possible. For that reason the system was designed

such that when the grate stops or gets overheated, a stack cap is lifted to release heat through an emergency stack. At this time the monitor is bypassed. These situations are the only times the monitor is bypassed. Because they represent upset conditions or process downtime (production loss), the company has a strong vested interest in minimizing both the number and duration of occurrences.

The times listed in the monitor bypass section are when the grate emergency stack cap is open and there is combustion in the kiln. This is the only time when any NO_x and SO_2 are emitted. Times when the cap is open but there is no combustion in the kiln are not listed.

If you have any questions concerning these forms, please contact Stephani Campbell at (218) 778-8684.

Sincerely,

Travis Kolari

Plant Manager – Minnesota Ore Operations

Enclosure

cc: File



Excess Emissions Reporting Form - DRF-1

Continuous Monitoring Systems Reporting Form

Please note: This form has been updated. Please print, complete and remit <u>only</u> the forms. Please see the instructions in the Word version of DRF-1 to ensure proper use and understanding of definitions. <u>DO NOT</u> print and return the instructions.

Use this form to record and report excess emissions (EE) that are identified by *Continuous Monitoring Systems*. This includes Continuous Emission Monitoring Systems (CEMS) and Continuous Opacity Monitoring Systems (COMS). DRF-1 is the form you must use to report excess emissions from a stack as recorded by your facility's Continuous Emission Monitoring Systems (CEMS) and Continuous Opacity Monitoring Systems (COMS).

Address hard copy

Compliance Tracking Coordinator, Fourth Floor

Minnesota Pollution Control Agency

520 Lafayette Road North St. Paul, MN 55155-4194

1) General Facility Information

Company name: U. S. Steel	- Keetac			
AQ file no.: 62B		AQ permit no.:	13700063-005	
Report covers Quarter:	Third	Year:	2022	

2) CEMS/COMS Data Summary Table

				Duration of Monitor D	owntime		Duration of Excess Emi	ssions (EE)	
2a)	2b)	2c)	2d)	3i)	2e)	41)	2f)	4m)	2g)
Monitor ID	Monitor ID	EU/SV ID	Total Operating Time	Total Duration of Monitor	Downtime	Cumulative	Exempt EE % of TOT	Cumulative	Total EE
Number	Pollutant	Number	(TOT) (hr)	Downtime (hr)	% Of TOT	Duration of		Total	% of TOT
						Exempt EE		Duration of	
								All EE	
Line 2	NOx	SV 051	2208	0	0.0%	N/A	N/A	0	0.00%
Line 2	SO2	SV 051	2208	0	0.0%	N/A	N/A	0	0.00%

, 3a)	3b)	3c)	3d)	3e)	3f)	3	Bg)	3h)
	Monitor ID Pollutant or Parameter	Emission Unit Being Monitored	Beginning Date and Time of Downtime	End Date and Time of Downtime	Duration of Downtime (min)		onitor Downtime comments)	Corrective ActionTaken (clarifying comments)
Line 2	SO2	SV 051			0			
Line 2	NOx	SV 051			0			
			21) To	tal duration of downtime:	: 0	hours		

4) Duration of Excess Emissions: Provide the following information regarding each individual excess emission

i, barac	1011 01 =70	=	Sionis. I lovide alle	ronowing informati	onrogaranig	, caon maria	dai execce e	1111001011		
4a)	4b)	4c)	4d)	4e)	4f)	4g)	4h)	4i)	4j)	4k)
Emission	Monitor ID	Pollutant or	Beginning Date	End Date and	Limit and	Highest	Duration of	Total	Cause of EE	Corrective Action Taken
Unit ID	Number	Parameter	and Time of EE	Time of EE	Averaging	Reading of	Exempt EE	Duration	(clarifying comments)	(clarifying comments)
Number		Monitored			Period	EE with	(include	of All EE		
						Units	these			
						(example: 5	entries as			
						lb/hr, etc)	part of 4i)			
SV051	CM001	NOx	N/A	N/A	N/A	N/A	0	0	N/A	N/A
0)/05/	011005	200		21/4	NI/A	N//A			21/4	
SV051	CM005	SO2	N/A	N/A	N/A	N/A	0	0	N/A	N/A
	-	-								
	1	L	41) 0 1- 6	D "	L . –	<u> </u>			4 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	D
			4i) Cumulativ	e Duration of Exe	mpt Excess	Emissions:	0		4m) Cumulative Total	Duration 0 Hrs

5) Monitor Bypasses: Provide the following information for each period in which an emission unit is operating but is not being monitored because emissions were

5a)	5b)	5c)	5d)	5e)	5f)	5g)	5h)	5i)	5j)
Monitor ID number	Emission Unit Required to be Monitored	Pollutant and Limit Required to be Monitored	Beginning Date and Time of Bypass Period	End date and time of bypass period	Duration of monitor bypass (min)	Was P.C.E. operating during bypass period?	Duration of allowable monitor bypass (min)	Reason for monitor bypass (clarifying comments)	Corrective action taken (clarifying comments)
Line 2	SV 051	NOx and SO2	7/12/2022 19:12	7/12/2022 19:30	18	Yes	18	Bypass necessary to protect plant equipment	N/A
Line 2	SV 051	NOx and SO2	7/12/2022 19:57	7/12/2022 21:00	63	Yes	63	Bypass necessary to protect plant equipment	N/A
Line 2	SV 051	NOx and SO2	7/12/2022 21:00	7/12/2022 22:07	67	Yes	67	Bypass necessary to protect plant equipment	N/A
Line 2	SV 051	NOx and SO2	7/13/2022 15:06	7/13/2022 16:50	105	Yes	105	Bypass necessary to protect plant equipment	N/A
Line 2	SV 051	NOx and SO2	7/24/2022 9:25	7/24/2022 10:38	74	Yes	74	Bypass necessary to protect plant equipment	N/A
Line 2	SV 051	NOx and SO2	7/25/2022 9:16	7/25/2022 10:55	99	Yes	99	Bypass necessary to protect plant equipment	N/A
Line 2	SV 051	NOx and SO2	7/25/2022 10:55	7/25/2022 12:25	91	Yes	91	Bypass necessary to protect plant equipment	N/A
Line 2	SV 051	NOx and SO2	7/31/2022 19:20	7/31/2022 21:00	99	Yes	99	Bypass necessary to protect plant equipment	N/A
Line 2	SV 051	NOx and SO2	7/31/2022 21:00	7/31/2022 21:56	56	Yes	56	Bypass necessary to protect plant equipment	N/A
Line 2	SV 051	NOx and SO2	8/10/2022 4:35	8/10/2022 5:00	25	Yes	25	Bypass necessary to protect plant equipment	N/A
Line 2	SV 051	NOx and SO2	8/10/2022 5:00	8/10/2022 12:17	437	Yes	437	Bypass necessary to protect plant equipment	N/A
Line 2	SV 051	NOx and SO2	8/10/2022 12:38	8/10/2022 13:00	22	Yes	22	Bypass necessary to protect plant equipment	N/A
Line 2	SV 051	NOx and SO2	8/10/2022 13:00	8/10/2022 14:14	74	Yes	74	Bypass necessary to protect plant equipment	N/A

number Rec Mc Line 2 S	Emission Unit equired to be Monitored SV 051	Pollutant and Limit Required to be Monitored NOx and SO2	Beginning Date and Time of Bypass Period 8/18/2022 9:57	End date and time of bypass period	Duration of monitor bypass (min)	Was P.C.E. operating during bypass period?	Duration of allowable monitor bypass (min)	Reason for monitor bypass (clarifying comments)	Corrective action taken (clarifying comments)
Line 2 S		SO2	8/18/2022 9:57						
	SV 051	NOx and		8/18/2022 10:57	60	Yes	60	Bypass necessary to protect plant equipment	N/A
Line 2 S		SO2	8/18/2022 10:59	8/18/2022 11:03	4	Yes	4	Bypass necessary to protect plant equipment	N/A
	SV 051	NOx and SO2	8/18/2022 12:19	8/18/2022 12:45	26	Yes	26	Bypass necessary to protect plant equipment	N/A
Line 2 S	SV 051	NOx and SO2	8/26/2022 7:08	8/26/2022 7:28	20	Yes	20	Bypass necessary to protect plant equipment	N/A
Line 2 S	SV 051	NOx and SO2	9/1/2022 5:32	9/1/2022 10:05	273	Yes	273	Bypass necessary to protect plant equipment	N/A
			512.7.4.1.1	uration of allowable monitor by					

6) CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

	Travis Kolari
Signature of Responsible Official	Printed Name of Responsible Official
Plant Manager - Minnesota Ore Title	October 27, 2022 Date

COMS audits

	Operating	The second secon		Last audit			Next test	
Subject item	hours	Monitor ID	Pollutant	date	Cal error results	Pass/fail	due by:	Comments
						1		
N/A								

Cylinder gas audit's (CGA)

	Operating			Last audit			Next test	
Emission unit	hours	Monitor ID	Pollutant	date	Cal error results	Pass/fail	due by:	Comments
					Low 0.92%			
SV051/EU030	2208	CM001	NOx	9/15/2022	Mid 1.44%	Pass	12/31/2022	
					Low 1.27%			
SV051/EU030	2208	CM005	SO2	9/15/2022	Mid 0.64%	Pass	12/31/2022	
		T						
						1		

Linearity

	Operating			Last audit			Next test	TAL STREET, THE STREET, AND TH
Emission unit	hours	Monitor ID	Pollutant	date	Cal error results	Pass/fail	due by:	Comments
					Low			
					Mid	1		
N/A					High]		

Relative accuracy test audit (RATA)

	Operating			Last audit	Relative		Next test	
Emission unit	hours	Monitor ID	Pollutant	date	accuracy	Pass/fail	due by:	Comments
SV051		CM001	NOx	3/22/2022	9.9%	Pass	3/31/2023	
SV051		CM005	SO2	3/22/2022	10.1%	Pass	3/31/2023	

Facility Name: US Steel KeeTac

Location:,

NOX WGS Audit Test Results

Mfr. & Model: AMETEK 920 SO2 NOX

Serial Number: AE-920-10086-1

Test Date: 9/15/2022

Tester: Ryan Hei

Analyzer Span: 600.000 PPMW

	Low	Mid		
Reference Target	20 - 30% of Span	50 - 60% of Span		
Range	(120.000 PPMW - 180.000 PPMW)	(300.000 PPMW - 360.000 PPMW)		
Concentration	130.200	324.000		
Cylinder No	CC422243	CC322615		
Expiration Date	6/24/2025	8/30/2024		

	Lo)W	M	id
	Time	Monitor Value	Time	Monitor Value
Run 1	12:32	128.000	12:35	318.000
Run 2	12:42	130.000	12:45	320.000
Run 3	12:52	129.000	12:55	320.000
Avg Monitor Response		129.000		319.333
Calibration Error		0.92		1.44
Absolute Diff		1.200		4.667
Test Status		PASSED		PASSED

Avg. Monitor Response - Cal. Gas Concentration

Calibration Error = ______X 100

Cal. Gas Concentration

Facility Name: US Steel KeeTac

Location:,

SO2 WGS Audit Test Results

Mfr. & Model: AMETEK 920 SO2 NOX

Serial Number: AE-920-10086-1

Test Date: 9/15/2022

Tester: Ryan Hei

Analyzer Span: 250.000 PPMW

	Low	Mid
Reference Target	20 - 30% of Span	50 - 60% of Span
Range	(50.000 PPMW - 75.000 PPMW)	(125.000 PPMW - 150.000 PPMW)
Concentration	62.800	134.800
Cylinder No	CC401997	CC137851
Expiration Date	3/6/2025	11/23/2028

	Lo)W	M	id
	Time	Monitor Value	Time	Monitor Value
Run 1	13:11	62,000	13:14	136.000
Run 2	13:21	62.000	13:24	135.000
Run 3	13:31	62.000	13:34	136.000
Avg Monitor Response		62.000		135.667
Calibration Error		1.27		0.64
Absolute Diff		0.800		0.867
Test Status		PASSED		PASSED

Avg. Monitor Response - Cal. Gas Concentration

Calibration Error = _______X 100

Cal. Gas Concentration

Attachment 1 - Duration of Excess Emissions Table

Emission	Monitor	Pollutant	Date of EE	Beginning and	Magnitude of the EE	Cause of EE	Corrective or Preventative
Unit ID	ID			end time of EE			Actions Taken
SV051	CM001	NOx	7/1/22-	7/1/22-9/30/22	NOx emissions have not	The USEPA Federal	U. S. Steel – Keetac is actively in
			9/30/22		increased at U. S. Steel -	Implementation Plan for	mediation with USEPA regarding the
					Keetac. The applicable limit	Regional Haze for Keetac	FIP NOx limits. During this
					is significantly lower than	which established significantly	mediation process, U. S. Steel has
					Keetac's historic emissions	more stringent limits became	completed studies regarding Keetac
					 using good combustion 	effective on September 8,	emissions in an effort to reach
					practices. Because the FIP	2019. This limit is currently	resolution. USEPA is reviewing
					limit is significantly more	under judicial review in the	these materials. In the meantime,
					stringent than the existing	U.S. Court of Appeals for the	U. S. Steel – Keetac is relying on
					state standard, the	Eighth Circuit in which U.S.	good combustion practices to
					emissions at Keetac,	Steel has challenged the	minimize emissions while avoiding
					despite good combustion	technological and economical	impacts to safety and pellet quality.
					practices are substantially	feasibility of the limit. There is	
					higher than the existing FIP	also ongoing mediation	
					limit.	between U. S. Steel and USEPA	
						to resolve that case and to	
						develop revised NOx limits.	
SV051	CM005	SO2	N/A	N/A	N/A	N/A	N/A

Summary Table by Monitor Downtime Type U. S. Steel - Keetac 3rd Quarter 2022

NOx

Line	Duration (Hrs)	Description
Line 2	0	Automatic Calibration
0		Data Handling System Malfunction
	0	Sample Interface Malfunction
	0	Excess Drift Primary Analyzer
	0	Primary Analyzer Malfunction
	0	Preventative Maintenance

SO2

Line	Duration (Hrs)	Description
Line 2	0	Automatic Calibration
	0	Data Handling System Malfunction
	0	Sample Interface Malfunction
	0	Excess Drift Primary Analyzer
	0	Primary Analyzer Malfunction
	0	Preventative Maintenance



U. S. Steel Corporation Minnesota Ore Operations P.O. Box 417 Mt. Iron, MN 55768

CERTIFIED MAIL 7021 0350 0002 0965 3292

October 27, 2022

Air Quality Compliance Tracking Coordinator Minnesota Pollution Control Agency 520 Lafayette Road North St. Paul, MN 55155-4194

Re: United States Steel Corporation, Minnesota Ore Operations – Minntac

Air Emissions Permit No. 13700005-006

Quarterly Continuous Monitoring System Deviation Report

Dear Supervisor:

Enclosed with this letter is U. S. Steel – Minntac's (Minntac) Quarterly Excess Emissions Reporting Form for the 3^{rd} quarter of 2022. NOx/SO₂ Continuous Emission Monitoring Systems (CEMS) are certified on all Agglomerator Waste Gas Lines.

Deviations associated with Emission Limits

There were no deviations during the 3rd quarter of 2022.

Deviations associated with Monitor Downtime

There were one hundred and thirty-five instances of monitor downtime for either NOx or SO₂. The individual downtime durations and causes are listed in the monitor downtime section of this report.

Deviations associated with Monitor Bypass

Minntac utilizes a grate/kiln system for pelletizing taconite. Although this is an extremely hot process (with temperatures exceed 2500°F in the kiln), the equipment is designed to withstand the high temperatures and will do so during normal operation. However, the grate is very susceptible to heat damage during upset conditions or if stopped for any reason while it is hot. To prevent equipment damage and heat related safety issues during these situations, large amounts of heat must be released from the grate as soon as possible. For that reason the system was designed such that when the grate stops or gets overheated, a stack cap is lifted to release heat through an emergency stack. At this time the monitor is bypassed. These situations are the only times the monitor is bypassed. Because they represent upset conditions or process downtime (production loss), the company has a strong vested interest in minimizing both the number and duration of occurrences.

The times listed in the monitor bypass section are when the grate emergency stack cap is open and there is combustion in the kiln. This is the only time when any NO_x or SO_2 is emitted. Times when the cap is open but there is no combustion in the kiln are not listed. For this reporting period, bypass times were excluded during the period in February where Lines 3 and 4 were unable to operate due to the product handling system unable to operate as a result of a structural failure. However, since the indurating furnaces provide the vast majority of heat to the building during the winter months, the flames were re-lit to provide heat to the building to avoid freezing water systems. The indurating furnaces were not in a period of operation, startup, shutdown or malfunction.

If you have any questions concerning these forms, please contact Stephani Campbell at (218) 778-8684.

Sincerely,

Lukas Klemke

Plant Manager - Minntac

Enclosure

cc: File



520 Lafayette Road North St. Paul, MN 55155-4194

Excess Emissions Reporting Form

Air Quality Permit Program Doc Type: Excess Emission Report

Note: Please complete, and remit only the forms. Please see the instructions to ensure proper use and understanding of definitions. Do not print and return the instructions.

General Information about Deviation and Compliance Reporting

If your permit requires you to submit deviation reports or an annual compliance certification, you should use the Deviation Reporting Forms (DRFs) and Annual Compliance Certification Report (CR-04), unless you get Minnesota Pollution Control Agency (MPCA) approval to use another format or your facility's permit specifies otherwise. There are two separate DRF forms: DRF-1 and DRF-2.

DRF-2

is used to report direct excess stack emissions (EE) recorded by Continuous Emission Monitoring Systems (CEMS) and Continuous Opacity Monitoring Systems

DRF-1

is used to report deviations recorded by periodic monitoring systems, deviations of permitted operating conditions and surrogate parameters whether recorded

Some examples: flow rate, temperature, throughput, control equipment operating parameters, fuel-use records

CR-04:

is used to report facility compliance status at the end of each year if required by your permit.

Address hard copy

Air Compliance Tracking Coordinator, Minnesota Pollution Control Agency

report submittals to:

520 Lafayette Road North, St. Paul, Minnesota 55155-4195

Or e-mail a signed and

AQRoutineReport.PCA@state.mn.us

scanned PDF copy to:

(see e-mail instructions in "Routine Air Report Instructions Letter" at:

http://www.pca.state.mn.us/nwqh472

1) General Facility Information

Facility name:

United States Steel Corporation, Minnesota Ore Operations, Minntac

AQ file no.:

County:

St. Louis

AQ permit #: Year:

13700005 2022

Report covers quarter: Third

2)	CEMS/COMS	Data	Summary	Table
-,			<u>,</u>	,

				Duration of	f Monitor				
				Downt	ime	Dι	ıration of Ex	cess Emissions	(EE)
2a)	2b)	2c)	2d)	3i)	2e)	41)	2f)	4m)	2g)
Monitor ID	Monitor ID	EU/SV ID	Total Operating	Total Duration	Downtime	Cumulative	Exempt EE	Cumulative	Total EE % of
Number	Pollutant	Number	Time	of Monitor	% Of TOT	Duration of	% of TOT	Total Duration of	TOT
			(TOT)	Downtime (hr)		Exempt EE		All EE	
MR 001	NOx	SV-103	2119	44	2.1%	0	0%	0	0%
MR 002	NOx	SV-118	2125	32	1.5%	0	0%	0	0%
MR 003	NOx	SV-127	2134	4	0.2%	0	0%	0	0%
MR 004	NOx	SV-144	2195	31	1.4%	0	0%	0	0%
MR 005	NOx	SV-151	2166	34	1.6%	0	0%	0	0%
MR 001	SO2	SV-103	2119	77	3.6%	0	0%	0	0%
MR 002	SO2	SV-118	2125	67	3.2%	0	0%	0	0%
MR 003	SO2	SV-127	2134	36	1.7%	0	0%	0	0%
MR 004	SO2	SV-144	2195	46	2.1%	0	0%	0	0%
MR 005	SO2	SV-151	2166	34	1.6%	0	0%	0	0%
			•		4				

	itor, as needed.			01-)			
3a) Monitor ID	3b) Pollutant or	3c) Emission	3d) Beginning Date and	3e) End Date and Time of	3f) Duration of	3g) Reason for Monitor	3h) Corrective ActionTaken
Number	parameter monitored	Unit Being Monitored	Time of Downtime	Downtime	Downtime (minutes)	Downtime (clarifying comments)	(clarifying comments)
Line 3	NOx	SV103	07/18/2022 05:00:00	07/18/2022 05:59:00	60	Automatic Calibration	Performed necessary maintenance
Line 3	NOx	SV103	07/18/2022 06:00:00	07/18/2022 08:59:00	180	Excess Drift Primary Analyzer	Performed necessary maintenance
Line 3	NOx	SV103	07/18/2022 09:00:00	07/18/2022 09:59:00	60	Automatic Calibration	Performed necessary maintenance
Line 3	NOx	SV103	07/20/2022 10:00:00	07/20/2022 10:59:00	60	Automatic Calibration	Performed necessary maintenance
Line 3	NOx	SV103	07/23/2022 05:00:00	07/23/2022 05:59:00	60	Automatic Calibration	Performed necessary maintenance
Line 3	NOx	SV103	07/23/2022 06:00:00	07/23/2022 10:59:00	300	Excess Drift Primary Analyzer	Performed necessary maintenance
Line 3	NOx	SV103	07/26/2022 17:00:00	07/27/2022 04:59:00	720	Primary Analyzer Malfunction	Performed necessary maintenance
Line 3	NOx	SV103	07/27/2022 05:00:00	07/27/2022 05:59:00	60	Automatic Calibration	Performed necessary maintenance
Line 3	NOx	SV103	07/27/2022 06:00:00	07/27/2022 06:59:00	60	Excess Drift Primary Analyzer	Performed necessary maintenance
Line 3	NOx	SV103	08/22/2022 21:00:00	08/22/2022 23:59:00	180	Primary Analyzer Malfunction	Performed necessary maintenance
Line 3	NOx	SV103	08/23/2022 12:00:00	08/23/2022 13:59:00	120	Primary Analyzer Malfunction	Performed necessary maintenance
Line 3	NOx	SV103	08/25/2022 05:00:00	08/25/2022 05:59:00	60	Automatic Calibration	Performed necessary maintenance
Line 3	NOx	SV103	08/25/2022 06:00:00	08/25/2022 07:59:00	120	Excess Drift Primary Analyzer	Performed necessary maintenance
Line 3	NOx	SV103	08/25/2022 08:00:00	08/25/2022 08:59:00	60	Automatic Calibration	Performed necessary maintenance
Line 3	NOx	SV103	09/06/2022 11:00:00	09/06/2022 11:59:00	60	Automatic Calibration	Performed necessary maintenance
Line 3	NOx	SV103	09/17/2022 08:00:00	09/17/2022 10:59:00	180	Primary Analyzer Malfunction	Performed necessary maintenance
Line 3	NOx	SV103	09/19/2022 09:00:00	09/19/2022 09:59:00	60	Automatic Calibration	Performed necessary maintenance
Line 3	NOx	SV103	09/28/2022 11:00:00	09/28/2022 11:59:00	60	Automatic Calibration	Performed necessary maintenance
Line 3	NOx	SV103	09/30/2022 10:00:00	09/30/2022 10:59:00	60	Automatic Calibration	Performed necessary maintenance
Line 3	NOx	SV103	09/30/2022 12:00:00	09/30/2022 12:59:00	60	Preventative Maintenance	Performed necessary maintenance
Line 3	NOx	SV103	09/30/2022 13:00:00	09/30/2022 13:59:00	60	Automatic Calibration	Performed necessary maintenance
Line 3	SO2	SV103	07/15/2022 05:00:00	07/15/2022 05:59:00	60	Automatic Calibration	Performed necessary maintenance
Line 3	SO2	SV103	07/15/2022 06:00:00	07/15/2022 08:59:00	180	Excess Drift Primary Analyzer	Performed necessary maintenance
Line 3	SO2	SV103	07/18/2022 06:00:00	07/18/2022 08:59:00	180	Excess Drift Primary Analyzer	Performed necessary maintenance
Line 3	SO2	SV103	07/18/2022 09:00:00	07/18/2022 09:59:00	60	Automatic Calibration	Performed necessary maintenance
Line 3	SO2	SV103	07/19/2022 05:00:00	07/19/2022 05:59:00	60	Automatic Calibration	Performed necessary maintenance
Line 3	SO2	SV103	07/19/2022 06:00:00	07/19/2022 08:59:00	180	Excess Drift Primary Analyzer	Performed necessary maintenance
Line 3	SO2	SV103	07/19/2022 09:00:00	07/19/2022 09:59:00	60	Automatic Calibration	Performed necessary maintenance
Line 3	SO2	SV103	07/20/2022 10:00:00	07/20/2022 10:59:00	60	Automatic Calibration	Performed necessary maintenance
Line 3	SO2	SV103	07/23/2022 05:00:00	07/23/2022 05:59:00	60	Automatic Calibration	Performed necessary maintenance
Line 3	SO2	SV103	07/23/2022 06:00:00	07/23/2022 10:59:00	300	Excess Drift Primary Analyzer	Performed necessary maintenance

3f) 3a) 3b) 3c) 3d) 3e) 3g) 3h) Pollutant or Emission Beginning Date and End Date and Time of Duration of Reason for Monitor Corrective ActionTaken Monitor ID Unit Being Time of Downtime Downtime Downtime Downtime Number parameter (clarifying comments) (clarifying comments) monitored Monitored (minutes) Primary Analyzer Performed necessary SO₂ SV103 07/26/2022 17:00:00 07/27/2022 04:59:00 720 Line 3 Malfunction maintenance Performed necessary Line 3 SO2 SV103 07/27/2022 05:00:00 07/27/2022 05:59:00 60 Automatic Calibration maintenance **Excess Drift Primary** Performed necessary SO₂ SV103 07/27/2022 06:00:00 07/27/2022 06:59:00 Line 3 60 Analyzer maintenance Performed necessary 08/01/2022 05:00:00 08/01/2022 05:59:00 SO₂ SV103 60 Automatic Calibration Line 3 maintenance **Excess Drift Primary** Performed necessary SO2 SV103 08/01/2022 06:00:00 08/01/2022 08:59:00 180 Line 3 Analyzer maintenance Performed necessary Line 3 SO₂ SV103 08/01/2022 09:00:00 08/01/2022 09:59:00 60 Automatic Calibration maintenance Primary Analyzer Performed necessary Line 3 SO₂ SV103 08/22/2022 21:00:00 08/22/2022 23:59:00 180 Malfunction maintenance Performed necessary SO₂ SV103 08/23/2022 05:00:00 08/23/2022 05:59:00 60 Automatic Calibration Line 3 maintenance **Excess Drift Primary** Performed necessary Line 3 SO₂ SV103 08/23/2022 06:00:00 08/23/2022 06:59:00 60 Analyzer maintenance Performed necessary SO2 SV103 08/23/2022 07:00:00 08/23/2022 07:59:00 Line 3 60 Automatic Calibration maintenance Primary Analyzer Performed necessary SO2 SV103 08/23/2022 12:00:00 08/23/2022 13:59:00 120 Line 3 Malfunction maintenance Performed necessary SV103 08/25/2022 05:00:00 08/25/2022 05:59:00 60 Automatic Calibration Line 3 SO2 maintenance Excess Drift Primary Performed necessary SO₂ SV103 08/25/2022 06:00:00 08/25/2022 07:59:00 120 Line 3 Analyzer maintenance Performed necessary Line 3 SO3 SV103 08/25/2022 08:00:00 08/25/2022 08:59:00 60 Automatic Calibration maintenance Performed necessary SO4 SV103 09/06/2022 11:00:00 09/06/2022 11:59:00 60 Automatic Calibration Line 3 maintenance Primary Analyzer Performed necessary 09/16/2022 17:00:00 09/17/2022 04:59:00 720 Line 3 SO5 SV103 Malfunction maintenance Performed necessary Line 3 SO6 SV103 09/17/2022 05:00:00 09/17/2022 05:59:00 60 Automatic Calibration maintenance **Excess Drift Primary** Performed necessary S07 SV103 09/17/2022 06:00:00 09/17/2022 11:59:00 360 Line 3 Analyzer maintenance Performed necessary SO8 SV103 09/17/2022 12:00:00 09/17/2022 12:59:00 60 Automatic Calibration Line 3 maintenance Performed necessary SV103 09/19/2022 09:00:00 09/19/2022 09:59:00 Automatic Calibration Line 3 SO2 60 maintenance Performed necessary Line 3 SO2 SV103 09/28/2022 11:00:00 09/28/2022 11:59:00 60 Automatic Calibration maintenance Performed necessary SO2 SV103 09/30/2022 10:00:00 09/30/2022 10:59:00 60 Automatic Calibration Line 3 maintenance Preventative Performed necessary 09/30/2022 12:00:00 Line 3 SO2 SV103 09/30/2022 12:59:00 60 Maintenance maintenance Performed necessary SV103 09/30/2022 13:00:00 09/30/2022 13:59:00 60 Automatic Calibration Line 3 SO2 maintenance Sample Interface Performed necessary Line 4 NOx SV118 07/13/2022 07:00:00 07/13/2022 07:59:00 60 Malfunction maintenance Performed necessary Primary Analyzer Line 4 NOx SV118 07/19/2022 20:00:00 07/20/2022 05:59:00 600 Malfunction maintenance Performed necessary **Automatic Calibration** 07/20/2022 06:00:00 07/20/2022 06:59:00 60 Line 4 NOx SV118 maintenance **Excess Drift Primary** Performed necessary NOx SV118 07/20/2022 07:00:00 07/20/2022 09:59:00 180 Line 4 Analyzer maintenance Preventative Performed necessary Line 4 NOx SV118 07/20/2022 15:00:00 07/20/2022 15:59:00 60 Maintenance maintenance Performed necessary NOx SV118 08/08/2022 14:00:00 08/08/2022 16:59:00 180 Automatic Calibration Line 4 maintenance **Excess Drift Primary** Performed necessary Line 4 NOx SV118 08/08/2022 17:00:00 08/08/2022 23:59:00 420 Analyzer maintenance **Excess Drift Primary** Performed necessary 300 08/09/2022 01:00:00 08/09/2022 05:59:00 Line 4 NOx SV118 Analyzer maintenance Primary Analyzer Performed necessary SV118 09/20/2022 14:59:00 Line 4 NOx 09/20/2022 14:00:00 60 Malfunction maintenance Sample Interface Performed necessary 07/13/2022 07:00:00 07/13/2022 07:59:00 60 Line 4 SO2 SV118 Malfunction maintenance Primary Analyzer Performed necessary SO2 SV118 07/19/2022 20:00:00 07/20/2022 05:59:00 600 Line 4 Malfunction maintenance

	or, as needed		Y	_		γ	y
3a)	3b)	3c)	3d)	3e)	3f)	3g)	3h)
Monitor ID	Pollutant or	Emission	Beginning Date and Time of Downtime	End Date and Time of	Duration of	Reason for Monitor	Corrective ActionTaken
Number	parameter monitored	Unit Being Monitored	Time of Downtime	Downtime	Downtime (minutes)	Downtime (clarifying comments)	(clarifying comments)
	mormored	Widillorda			(minutes)	(ciarrying comments)	D (
Line 4	SO2	SV118	07/20/2022 06:00:00	07/20/2022 06:59:00	60	Automatic Calibration	Performed necessary maintenance
	000	0) (4.4.0	07/00/0000 07 00 00	07/00/0000 00 50 00	100	Excess Drift Primary	Performed necessary
Line 4	SO2	SV118	07/20/2022 07:00:00	07/20/2022 09:59:00	180	Analyzer	maintenance
Line 4	SO2	SV118	07/20/2022 13:00:00	07/20/2022 15:59:00	180	Primary Analyzer	Performed necessary
						Malfunction	maintenance Performed necessary
Line 4	SO2	SV118	07/21/2022 06:00:00	07/21/2022 06:59:00	60	Automatic Calibration	maintenance
Line 4	SO2	SV118	07/21/2022 07:00:00	07/21/2022 07:59:00	60	Excess Drift Primary	Performed necessary
			0772172022 07.00.00	0772172022 07:00:00		Analyzer	maintenance Performed necessary
Line 4	SO2	SV118	07/21/2022 08:00:00	07/21/2022 08:59:00	60	Automatic Calibration	maintenance
Line 4	SO2	SV118	08/08/2022 14:00:00	08/08/2022 16:59:00	180	Automatic Calibration	Performed necessary
LIIIC 4	002	00110	00/00/2022 14.00.00	00/00/2022 10.55.00	100		maintenance
Line 4	SO2	SV118	08/08/2022 17:00:00	08/08/2022 23:59:00	420	Excess Drift Primary Analyzer	Performed necessary maintenance
Line 4	SO2	SV118	08/09/2022 01:00:00	08/09/2022 05:59:00	300	Excess Drift Primary	Performed necessary
LINE 4	302	37110	00/09/2022 01.00.00	06/09/2022 05.59.00	300	Analyzer	maintenance
Line 4	SO2	SV118	08/09/2022 06:00:00	08/09/2022 06:59:00	60	Automatic Calibration	Performed necessary maintenance
1.1	000	0) (4.4.0	00.000.000.000.00	00/00/0000 07.50.00		Excess Drift Primary	Performed necessary
Line 4	SO2	SV118	08/09/2022 07:00:00	08/09/2022 07:59:00	60	Analyzer	maintenance
Line 4	SO2	SV118	08/09/2022 08:00:00	08/09/2022 08:59:00	60	Automatic Calibration	Performed necessary
						Excess Drift Primary	maintenance Performed necessary
Line 4	SO2	SV118	08/10/2022 14:00:00	08/10/2022 19:59:00	360	Analyzer	maintenance
Line 4	SO2	SV118	08/11/2022 14:00:00	08/11/2022 18:59:00	300	Excess Drift Primary	Performed necessary
						Analyzer Excess Drift Primary	maintenance Performed necessary
Line 4	SO2	SV118	08/14/2022 14:00:00	08/11/2022 19:59:00	360	Analyzer	maintenance
Line 4	SO2	SV118	08/21/2022 14:00:00	08/11/2022 16:59:00	180	Excess Drift Primary	Performed necessary
LIIIC 4	002	07110	00/21/2022 14.00.00	00/11/2022 10:00:00	100	Analyzer Primary Analyzer	maintenance
Line 4	SO2	SV118	09/07/2022 12:00:00	09/07/2022 18:59:00	420	Malfunction	Performed necessary maintenance
Line 4	SO2	SV118	09/20/2022 14:00:00	09/20/2022 14:59:00	60	Primary Analyzer	Performed necessary
LING 4	302	37110	03/20/2022 14.00.00	09/20/2022 14.09.00		Malfunction	maintenance
Line 5	NOx	SV127	08/12/2022 06:00:00	08/12/2022 06:59:00	60	Automatic Calibration	Performed necessary maintenance
Line F	NOv	SV127	00/40/2022 07:00:00	08/12/2022 07:59:00	60	Excess Drift Primary	Performed necessary
Line 5	NOx	5V121	08/12/2022 07:00:00	08/12/2022 07:59.00	60	Analyzer	maintenance
Line 5	NOx	SV127	08/12/2022 08:00:00	08/12/2022 08:59:00	60	Automatic Calibration	Performed necessary maintenance
1: 5	NO	0) (407	00/45/0000 45 00 00	00/45/0000 45.50.00	20	A . I	Performed necessary
Line 5	NOx	SV127	09/15/2022 15:00:00	09/15/2022 15:59:00	60	Automatic Calibration	maintenance
Line 5	SO2	SV127	07/03/2022 06:00:00	07/03/2022 06:59:00	60	Automatic Calibration	Performed necessary
						Excess Drift Primary	maintenance Performed necessary
Line 5	SO2	SV127	07/03/2022 07:00:00	07/04/2022 05:59:00	1,380	Analyzer	maintenance
Line 5	SO2	SV127	07/04/2022 06:00:00	07/04/2022 06:59:00	60	Automatic Calibration	Performed necessary
						Excess Drift Primary	maintenance Performed necessary
Line 5	SO2	SV127	07/04/2022 07:00:00	07/04/2022 08:59:00	120	Analyzer	maintenance
Line 5	SO2	SV127	07/04/2022 09:00:00	07/04/2022 09:59:00	60	Automatic Calibration	Performed necessary
			0170112022 00100100	0170172022 00100100		Primary Analyzer	maintenance Performed necessary
Line 5	SO2	SV127	07/20/2022 19:00:00	07/20/2022 22:59:00	240	Malfunction	maintenance
Line 5	SO2	SV127	08/12/2022 06:00:00	08/12/2022 06:59:00	60	Automatic Calibration	Performed necessary
Line	002	OVIZI	00/12/2022 00:00:00	00/12/2022 00.00.00			maintenance
Line 5	SO2	SV127	08/12/2022 07:00:00	08/12/2022 07:59:00	60	Excess Drift Primary Analyzer	Performed necessary maintenance
Line 5	SO2	SV127	08/12/2022 08:00:00	08/12/2022 08:59:00	60	Automatic Calibration	Performed necessary
Line 5	302	3 1 1 2 1	00/12/2022 00.00.00	00/12/2022 00.09.00	00	Automatic Campiation	maintenance
Line 5	SO2	SV127	09/15/2022 15:00:00	09/15/2022 15:59:00	60	Automatic Calibration	Performed necessary maintenance
Lina	NO	0)/4.4.4	07/24/2022 40:00:00	07/04/0000 40:50:00	60	Automatic Callibration	Performed necessary
Line 6	NOx	SV144	07/21/2022 10:00:00	07/21/2022 10:59:00	60	Automatic Calibration	maintenance
Line 6	NOx	SV144	08/26/2022 07:00:00	08/26/2022 16:59:00	600	Preventative	Performed necessary
 			00/00/0000 10 77 77	00/00/0000		Maintenance Preventative	maintenance Performed necessary
Line 6	NOx	SV144	08/26/2022 18:00:00	08/26/2022 20:59:00	180	Maintenance	maintenance

each monitor, as needed 3b) 3c) 3d) 3e) 3f) 3g) 3h) 3a) Duration of Monitor ID Pollutant or Emission Beginning Date and End Date and Time of Reason for Monitor Corrective ActionTaken Unit Being Time of Downtime Downtime Downtime Downtime (clarifying comments) Number parameter monitored Monitored (minutes) (clarifying comments) Performed necessary NOx SV144 08/27/2022 21:00:00 08/27/2022 21:59:00 60 Automatic Calibration Line 6 maintenance Preventative Performed necessary Line 6 NOx SV144 09/01/2022 10:00:00 09/01/2022 14:59:00 300 Maintenance maintenance Performed necessary Preventative 09/02/2022 11:00:00 09/02/2022 11:59:00 Line 6 NOx SV144 60 Maintenance maintenance Performed necessary 09/06/2022 09:00:00 09/06/2022 10:59:00 120 Automatic Calibration NOx SV144 Line 6 maintenance Performed necessary Automatic Calibration Line 6 NOx SV144 09/09/2022 13:00:00 09/09/2022 13:59:00 60 maintenance Performed necessary NOx SV144 09/09/2022 15:00:00 09/09/2022 15:59:00 60 Automatic Calibration Line 6 maintenance Primary Analyzer Performed necessary Line 6 NOx SV144 09/19/2022 08:00:00 09/19/2022 09:59:00 120 Malfunction maintenance Performed necessary Line 6 NOx SV144 09/19/2022 10:00:00 09/19/2022 11:59:00 120 Automatic Calibration maintenance Primary Analyzer Performed necessary NOx SV144 09/19/2022 12:00:00 09/19/2022 12:59:00 60 Line 6 Malfunction maintenance Performed necessary 09/22/2022 10:00:00 09/22/2022 10:59:00 60 Automatic Calibration Line 6 NOx SV144 maintenance Performed necessary 07/14/2022 06:00:00 07/14/2022 07:59:00 120 Automatic Calibration SO₂ SV144 Line 6 maintenance Performed necessary SV144 07/21/2022 10:00:00 07/21/2022 10:59:00 60 Automatic Calibration Line 6 SO2 maintenance Preventative Performed necessary Line 6 SO2 SV144 08/26/2022 07:00:00 08/26/2022 16:59:00 600 Maintenance maintenance Preventative Performed necessary SO2 SV144 08/26/2022 18:00:00 08/26/2022 20:59:00 180 Line 6 Maintenance maintenance Excess Drift Primary Performed necessary Line 6 SO₂ SV144 08/27/2022 05:00:00 08/27/2022 19:59:00 840 Analyzer maintenance Performed necessary SO₂ 08/27/2022 21:00:00 08/27/2022 21:59:00 **Automatic Calibration** Line 6 SV144 60 maintenance Preventative Performed necessary 09/01/2022 10:00:00 09/01/2022 14:59:00 300 SO2 SV144 Line 6 Maintenance maintenance Performed necessary Preventative SO2 SV144 09/02/2022 11:00:00 09/02/2022 11:59:00 60 Line 6 Maintenance maintenance Performed necessary Line 6 SO2 SV144 09/06/2022 09:00:00 09/06/2022 10:59:00 120 Automatic Calibration maintenance Performed necessary SV144 09/09/2022 13:00:00 09/09/2022 13:59:00 60 Automatic Calibration Line 6 SO2 maintenance Performed necessary Line 6 SO2 SV144 09/09/2022 15:00:00 09/09/2022 15:59:00 60 Automatic Calibration maintenance Primary Analyzer Performed necessary SV144 09/19/2022 09:00:00 09/19/2022 09:59:00 60 Line 6 SO2 Malfunction maintenance Performed necessary SO2 SV144 09/19/2022 10:00:00 09/19/2022 11:59:00 120 Automatic Calibration Line 6 maintenance Primary Analyzer Performed necessary SO2 SV144 09/19/2022 12:00:00 09/19/2022 12:59:00 60 Line 6 Malfunction maintenance Performed necessary 09/22/2022 10:00:00 Line 6 SO2 SV144 09/22/2022 10:59:00 60 Automatic Calibration maintenance Excess Drift Primary Performed necessary SV151 08/14/2022 03:00:00 08/14/2022 21:59:00 1,140 Line 7 NOx Analyzer maintenance **Excess Drift Primary** Performed necessary Line 7 NOx SV151 08/15/2022 00:00:00 08/15/2022 08:59:00 540 Analyzer maintenance Primary Analyzer Performed necessary NOx SV151 09/04/2022 08:00:00 09/04/2022 10:59:00 180 Line 7 Malfunction maintenance Primary Analyzer Performed necessary SV151 09/17/2022 18:00:00 09/17/2022 20:59:00 180 Line 7 NOx Malfunction maintenance Excess Drift Primary Performed necessary 08/14/2022 21:59:00 Line 7 SO2 SV151 08/14/2022 03:00:00 1,140 Analyzer maintenance Excess Drift Primary Performed necessary SO2 SV151 08/15/2022 00:00:00 08/15/2022 08:59:00 540 Line 7 Analyzer maintenance Primary Analyzer Performed necessary Line 7 SO2 SV151 09/04/2022 08:00:00 09/04/2022 10:59:00 180 Malfunction maintenance Performed necessary Primary Analyzer 09/17/2022 18:00:00 SO2 SV151 09/17/2022 20:59:00 180 Line 7 Malfunction maintenance 405 3i) Total duration of downtime: hours

4) Duration of Excess Emissions: Provide the following information regarding each individual excess emission identified by a monitor. Make a separate table for each monitor, as needed.

CITIOSIOTITIC	mission identified by a monitor. Make a separate table for each monitor, as needed.										
4a)	4b)	4c)	4d)	4e)	4f)	4g)	4h)	4i)	4j)	4k)	
Emission	Monitor	Pollutant or	Beginning	End Date	Limit and	Highest	Duration of	Total	Cause of EE	Corrective Action	
Unit ID	ID	Parameter	Date and	and Time	Averaging	Reading of	Exempt EE	Duration of	(clarifying	Taken (clarifying	
Number	Number	Monitored	Time of EE	of EE	Period	EE with	(include	All EE	comments)	comments)	
						Units	these				
						(example: 5	entries as				
						lb/hr, etc)	part of 4i)				
SV-103	MR 001	Nox/SO2	N/A	N/A	N/A	N/A	0	0	N/A	N/A	
SV-118	MR 002	Nox/SO2	N/A	N/A	N/A	N/A	0	0	N/A	N/A	
SV-127	MR 003	Nox/SO2	N/A	N/A	N/A	N/A	0	0	N/A	N/A	
SV-144	MR 004	Nox/SO2	N/A	N/A	N/A	N/A	0	0	N/A	N/A	
SV-151	MR 005	Nox/SO2	N/A	N/A	N/A	N/A	0	0	N/A	N/A	
		4I) Cun	aulative Dur	otion of Evo		Газіваіва	COLUMN DESCRIPTION OF THE PARTY		4 10		

4I) Cumulative Duration of Exempt Excess Emissions: 0 4m) Cumulative Total

5) Monitor Bypasses: Provide the following information for each period in which an emission unit is operating but is not being monitored because emissions were either partially or totally diverted around the monitoring system See Minn. R. 7017.1110 subp. 2c

5a)	5b)	5c)	5d)	5e)	5f)	5g)	5h)	5i)	5j)
Monitor ID number	Emission Unit Required to be Monitored	Pollutant and Limit Required to be Monitored	Beginning Date and Time of Bypass Period	End date and time of bypass period	Duration of monitor bypass	Was P.C.E. operating during bypass	Duration of allowable monitor	Reason for monitor bypass (clarifying comments)	Corrective action taken (clarifying
Line 3	SV103	NOx/SO2	7/4/22 12:33	7/4/22 12:54	(minutes)	period? YES	bypass 22	Bypass necessary to protect plant	comments) N/A
Line 3	SV103	NOx/SO2	7/6/22 9:45	7/6/22 12:06	141	YES	141	equipment. Bypass necessary to protect plant equipment.	N/A
Line 3	SV103	NOx/SO2	7/14/22 5:00	7/14/22 6:30	90	YES	90	Bypass necessary to protect plant equipment.	N/A
Line 3	SV103	NOx/SO2	7/14/22 6:30	7/14/22 13:22	412	YES	412	Bypass necessary to protect plant equipment.	N/A
Line 3	SV103	NOx/SO2	7/14/22 13:25	7/14/22 13:37	11	YES	11	Bypass necessary to protect plant equipment.	N/A
Line 3	SV103	NOx/SO2	7/19/22 8:02	7/19/22 8:21	19	YES	19	Bypass necessary to protect plant equipment.	N/A
Line 3	SV103	NOx/SO2	7/19/22 9:37	7/19/22 10:42	65	YES	65	Bypass necessary to protect plant equipment.	N/A
Line 3	SV103	NOx/SO2	8/8/22 11:32	8/8/22 13:59	147	YES	147	Bypass necessary to protect plant equipment.	N/A
Line 3	SV103	NOx/SO2	8/9/22 11:59	8/9/22 14:30	480	YES	480	Bypass necessary to protect plant equipment.	N/A
Line 3	SV103	NOx/SO2	8/9/22 14:30	8/9/22 22:30	480	YES	480	Bypass necessary to protect plant equipment.	N/A
Line 3	SV103	NOx/SO2	8/9/22 22:30	8/10/22 2:42	253	YES	253	Bypass necessary to protect plant equipment.	N/A
Line 3	SV103	NOx/SO2	8/10/22 15:20	8/10/22 16:09	48	YES	48	Bypass necessary to protect plant equipment.	N/A
Line 3	SV103	NOx/SO2	8/10/22 23:35	8/11/22 1:07	92	YES	92	Bypass necessary to protect plant equipment.	N/A
Line 3	SV103	NOx/SO2	8/17/22 0:45	8/17/22 1:11	26	YES	26	Bypass necessary to protect plant equipment.	N/A
Line 3	SV103	NOx/SO2	8/17/22 22:50	8/17/22 23:14	24	YES	24	Bypass necessary to protect plant equipment.	N/A
Line 3	SV103	NOx/SO2	8/31/22 12:53	8/31/22 13:34	41	YES	41	Bypass necessary to protect plant equipment.	N/A
Line 3	SV103	NOx/SO2	9/1/22 7:08	9/1/22 14:16	428	YES	428	Bypass necessary to protect plant equipment.	N/A
Line 3	SV103	NOx/SO2	9/11/22 19:55	9/11/22 20:59	64	YES	64	Bypass necessary to protect plant equipment.	N/A
Line 3	SV103	NOx/SO2	9/14/22 15:59	9/14/22 22:30	480	YES	480	Bypass necessary to protect plant equipment.	N/A

5) Monitor Bypasses: Provide the following information for each period in which an emission unit is operating but is not being monitored because emissions were either partially or totally diverted around the monitoring system See Minn. R. 7017.1110 subp. 2c

5a)	5b)	5c)	5d)	5e)	5f)	5g)	5h)	5i)	5j)
Monitor ID number	Emission Unit Required to be Monitored	Pollutant and Limit Required to be Monitored	Beginning Date and Time of Bypass Period	End date and time of bypass period	Duration of monitor bypass (minutes)	Was P.C.E. operating during bypass period?	Duration of allowable monitor bypass	Reason for monitor bypass (clarifying comments)	Corrective action taken (clarifying comments)
Line 3	SV103	NOx/SO2	9/14/22 22:30	9/15/22 6:30	480	YES	480	Bypass necessary to protect plant equipment.	N/A
Line 3	SV103	NOx/SO2	9/15/22 6:30	9/15/22 14:30	480	YES	480	Bypass necessary to protect plant equipment.	N/A
Line 3	SV103	NOx/SO2	9/15/22 14:30	9/15/22 21:36	426	YES	426	Bypass necessary to protect plant equipment.	N/A
Line 3	SV103	NOx/SO2	9/15/22 21:41	9/15/22 22:03	22	YES	22	Bypass necessary to protect plant equipment.	N/A
Line 3	SV103	NOx/SO2	9/15/22 22:04	9/15/22 22:30	26	YES	26	Bypass necessary to protect plant equipment.	N/A
Line 3	SV103	NOx/SO2	9/15/22 22:30	9/16/22 0:38	128	YES	128	Bypass necessary to protect plant equipment.	N/A
Line 3	SV103	NOx/SO2	9/16/22 6:34	9/16/22 9:49	195	YES	195	Bypass necessary to protect plant equipment.	N/A
Line 3	SV103	NOx/SO2	9/17/22 18:41	9/17/22 19:14	33	YES	33	Bypass necessary to protect plant equipment.	N/A
Line 3	SV103	NOx/SO2	9/17/22 22:44	9/18/22 0:17	93	YES	93	Bypass necessary to protect plant equipment.	N/A
Line 3	SV103	NOx/SO2	9/22/22 10:24	9/22/22 11:02	38	YES	38	Bypass necessary to protect plant equipment.	N/A
Line 3	SV103	NOx/SO2	9/26/22 6:44	9/26/22 7:02	18	YES	18	Bypass necessary to protect plant equipment.	N/A
Line 3	SV103	NOx/SO2	9/26/22 22:23	9/26/22 22:30	7	YES	7	Bypass necessary to protect plant equipment.	N/A
Line 3	SV103	NOx/SO2	9/26/22 22:30	9/26/22 22:56	26	YES	26	Bypass necessary to protect plant equipment.	N/A
Line 4	SV118	NOx/SO2	7/12/22 4:26	7/12/22 6:30	124	YES	124	Bypass necessary to protect plant equipment.	N/A
Line 4	SV118	NOx/SO2	7/12/22 6:30	7/12/22 14:30	480	YES	480	Bypass necessary to protect plant equipment.	N/A
Line 4	SV118	NOx/SO2	7/12/22 14:30	7/12/22 22:30	480	YES	480	Bypass necessary to protect plant equipment.	N/A
Line 4	SV118	NOx/SO2	7/12/22 22:30	7/13/22 6:30	480	YES	480	Bypass necessary to protect plant equipment.	N/A
Line 4	SV118	NOx/SO2	7/13/22 6:30	7/13/22 8:26	116	YES	116	Bypass necessary to protect plant equipment.	N/A
Line 4	SV118	NOx/SO2	7/14/22 12:31	7/14/22 12:48	16	YES	16	Bypass necessary to protect plant equipment.	N/A

5) Monitor Bypasses: Provide the following information for each period in which an emission unit is operating but is not being monitored because emissions were either partially or totally diverted around the monitoring system See Minn. R. 7017.1110 subp. 2c

5a)	5b)	5c)	5d)	5e)	5f)	5g)	5h)	5i)	5j)
Monitor ID number	Emission Unit Required to be Monitored	Pollutant and Limit Required to be Monitored	Beginning Date and Time of Bypass Period	End date and time of bypass period	Duration of monitor bypass (minutes)	Was P.C.E. operating during bypass period?	Duration of allowable monitor bypass	Reason for monitor bypass (clarifying comments)	Corrective action taken (clarifying comments)
Line 4	SV118	NOx/SO2	7/14/22 13:47	7/14/22 14:30	43	YES	43	Bypass necessary to protect plant equipment.	N/A
Line 4	SV118	NOx/SO2	7/14/22 14:30	7/14/22 14:45	15	YES	15	Bypass necessary to protect plant equipment.	N/A
Line 4	SV118	NOx/SO2	7/14/22 15:42	7/14/22 17:34	112	YES	112	Bypass necessary to protect plant equipment.	N/A
Line 4	SV118	NOx/SO2	7/27/22 18:00	7/27/22 20:29	149	YES	149	Bypass necessary to protect plant equipment.	N/A
Line 4	SV118	NOx/SO2	8/2/22 15:06	8/2/22 15:38	32	YES	32	Bypass necessary to protect plant equipment.	N/A
Line 4	SV118	NOx/SO2	8/5/22 9:31	8/5/22 12:15	164	YES	164	Bypass necessary to protect plant equipment.	N/A
Line 4	SV118	NOx/SO2	8/11/22 5:53	8/11/22 6:30	37	YES	37	Bypass necessary to protect plant equipment.	N/A
Line 4	SV118	NOx/SO2	8/11/22 6:30	8/11/22 7:57	87	YES	87	Bypass necessary to protect plant equipment.	N/A
Line 4	SV118	NOx/SO2	8/17/22 0:38	8/17/22 1:02	24	YES	24	Bypass necessary to protect plant equipment.	N/A
Line 4	SV118	NOx/SO2	8/17/22 22:54	8/17/22 23:17	23	YES	23	Bypass necessary to protect plant equipment.	N/A
Line 4	SV118	NOx/SO2	8/18/22 6:47	8/18/22 9:34	167	YES	167	Bypass necessary to protect plant equipment.	N/A
Line 4	SV118	NOx/SO2	8/24/22 2:58	8/24/22 6:30	212	YES	212	Bypass necessary to protect plant equipment.	N/A
Line 4	SV118	NOx/SO2	8/24/22 6:30	8/24/22 14:30	480	YES	480	Bypass necessary to protect plant equipment.	N/A
Line 4	SV118	NOx/SO2	8/24/22 14:30	8/24/22 16:10	100	YES	100	Bypass necessary to protect plant equipment.	N/A
Line 4	SV118	NOx/SO2	8/25/22 5:09	8/25/22 6:30	81	YES	81	Bypass necessary to protect plant equipment.	N/A
Line 4	SV118	NOx/SO2	8/25/22 6:30	8/25/22 9:56	207	YES	207	Bypass necessary to protect plant equipment.	N/A
Line 4	SV118	NOx/SO2	8/27/22 11:34	8/27/22 11:39	5	YES	5	Bypass necessary to protect plant equipment.	N/A
Line 4	SV118	NOx/SO2	8/27/22 19:34	8/27/22 19:42	8	YES	8	Bypass necessary to protect plant equipment.	N/A
Line 4	SV118	NOx/SO2	9/11/22 1:33	9/11/22 1:50	17	YES	17	Bypass necessary to protect plant equipment.	N/A

5) Monitor Bypasses: Provide the following information for each period in which an emission unit is operating but is not being monitored because emissions were either partially or totally diverted around the monitoring system See Minn. R. 7017.1110 subp. 2c

5a)	5b)	5c)	5d)	5e)	5f)	5g)	5h)	5i)	5j)
Monitor ID number	Emission Unit Required to be Monitored	Pollutant and Limit Required to be Monitored	Beginning Date and Time of Bypass Period	End date and time of bypass period	Duration of monitor bypass (minutes)	Was P.C.E. operating during bypass period?	Duration of allowable monitor bypass	Reason for monitor bypass (clarifying comments)	Corrective action taken (clarifying comments)
Line 4	SV118	NOx/SO2	9/11/22 8:00	9/11/22 8:59	59	YES	59	Bypass necessary to protect plant equipment.	N/A
Line 4	SV118	NOx/SO2	9/14/22 19:59	9/14/22 22:30	151	YES	151	Bypass necessary to protect plant equipment.	N/A
Line 4	SV118	NOx/SO2	9/14/22 22:30	9/15/22 6:30	480	YES	480	Bypass necessary to protect plant equipment.	N/A
Line 4	SV118	NOx/SO2	9/15/22 6:30	9/15/22 14:30	480	YES	480	Bypass necessary to protect plant equipment.	N/A
Line 4	SV118	NOx/SO2	9/15/22 14:30	9/15/22 18:22	232	YES	232	Bypass necessary to protect plant equipment.	N/A
Line 4	SV118	NOx/SO2	9/19/22 6:27	9/19/22 6:30	3	YES	3	Bypass necessary to protect plant equipment.	N/A
Line 4	SV118	NOx/SO2	9/19/22 6:30	9/19/22 6:46	16	YES	16	Bypass necessary to protect plant equipment.	N/A
Line 4	SV118	NOx/SO2	9/23/22 4:32	9/23/22 6:30	118	YES	118	Bypass necessary to protect plant equipment.	N/A
Line 4	SV118	NOx/SO2	9/23/22 6:30	9/23/22 11:14	284	YES	284	Bypass necessary to protect plant equipment.	N/A
Line 5	SV127	NOx/SO2	7/8/22 14:19	7/8/22 14:30	11	YES	11	Bypass necessary to protect plant equipment.	N/A
Line 5	SV127	NOx/SO2	7/8/22 14:30	7/8/22 16:26	117	YES	117	Bypass necessary to protect plant equipment.	N/A
Line 5	SV127	NOx/SO2	7/8/22 16:27	7/8/22 16:30	3	YES	3	Bypass necessary to protect plant equipment.	N/A
Line 5	SV127	NOx/SO2	7/11/22 22:28	7/11/22 22:59	31	YES	31	Bypass necessary to protect plant equipment.	N/A
Line 5	SV127	NOx/SO2	7/12/22 13:59	7/12/22 22:30	511	YES	511	Bypass necessary to protect plant equipment.	N/A
Line 5	SV127	NOx/SO2	7/12/22 22:30	7/13/22 6:30	480	YES	480	Bypass necessary to protect plant equipment.	N/A
Line 5	SV127	NOx/SO2	7/13/22 6:30	7/13/22 12:28	358	YES	358	Bypass necessary to protect plant equipment.	N/A
Line 5	SV127	NOx/SO2	7/13/22 12:30	7/13/22 12:38	8	YES	8	Bypass necessary to protect plant equipment.	N/A
Line 5	SV127	NOx/SO2	7/13/22 13:45	7/13/22 14:30	45	YES	45	Bypass necessary to protect plant equipment.	N/A
Line 5	SV127	NOx/SO2	7/13/22 14:30	7/13/22 16:16	106	YES	106	Bypass necessary to protect plant equipment.	N/A

5) Monitor Bypasses: Provide the following information for each period in which an emission unit is operating but is not being monitored because emissions were either partially or totally diverted around the monitoring system See Minn. R. 7017.1110 subp. 2c

5a)	5b)	5c)	5d)	5e)	5f)	5g)	5h)	5i)	5j)
			Beginning Date	End date and	Duration of	Was P.C.E.	Duration of	A STATE OF THE PARTY OF THE PAR	Corrective
Monitor	Emission Unit Required to be	Pollutant and Limit Required	and Time of	time of bypass	monitor	operating	allowable	Reason for monitor bypass (clarifying	action taken
number	Monitored	to be Monitored	Bypass Period	period	bypass	during bypass	monitor	comments)	(clarifying
Humber	Monitored	to be Monitored	Dypass renou	period	(minutes)	period?	bypass	Comments)	comments)
Line 5	SV127	NOx/SO2	7/15/22 18:25	7/15/22 20:23	118	YES	118	Bypass necessary to protect plant equipment.	N/A
Line 5	SV127	NOx/SO2	7/21/22 11:07	7/21/22 11:24	17	YES	17	Bypass necessary to protect plant equipment.	N/A
Line 5	SV127	NOx/SO2	7/27/22 18:10	7/27/22 18:23	13	YES	13	Bypass necessary to protect plant equipment.	N/A
Line 5	SV127	NOx/SO2	8/2/22 15:06	8/2/22 15:25	19	YES	19	Bypass necessary to protect plant equipment.	N/A
Line 5	SV127	NOx/SO2	8/2/22 20:06	8/2/22 22:30	144	YES	144	Bypass necessary to protect plant equipment.	N/A
Line 5	SV127	NOx/SO2	8/2/22 22:30	8/3/22 1:25	175	YES	175	Bypass necessary to protect plant equipment.	N/A
Line 5	SV127	NOx/SO2	8/16/22 9:50	8/16/22 10:49	58	YES	58	Bypass necessary to protect plant equipment.	N/A
Line 5	SV127	NOx/SO2	8/17/22 0:42	8/17/22 1:49	67	YES	67	Bypass necessary to protect plant equipment.	N/A
Line 5	SV127	NOx/SO2	8/17/22 22:50	8/17/22 23:27	37	YES	37	Bypass necessary to protect plant equipment.	N/A
Line 5	SV127	NOx/SO2	8/19/22 22:55	8/19/22 22:58	3	YES	3	Bypass necessary to protect plant equipment.	N/A
Line 5	SV127	NOx/SO2	8/19/22 22:58	8/19/22 23:01	3	YES	3	Bypass necessary to protect plant equipment.	N/A
Line 5	SV127	NOx/SO2	8/19/22 23:39	8/20/22 0:11	32	YES	32	Bypass necessary to protect plant equipment.	N/A
Line 5	SV127	NOx/SO2	8/20/22 1:36	8/20/22 2:41	65	YES	65	Bypass necessary to protect plant equipment.	N/A
Line 5	SV127	NOx/SO2	8/20/22 3:03	8/20/22 3:16	13	YES	13	Bypass necessary to protect plant equipment.	N/A
Line 5	SV127	NOx/SO2	8/25/22 5:39	8/25/22 6:30	51	YES	51	Bypass necessary to protect plant equipment.	N/A
Line 5	SV127	NOx/SO2	8/25/22 6:30	8/25/22 11:57	327	YES	327	Bypass necessary to protect plant equipment.	N/A
Line 5	SV127	NOx/SO2	8/28/22 0:31	8/28/22 2:45	135	YES	135	Bypass necessary to protect plant equipment.	N/A
Line 5	SV127	NOx/SO2	9/11/22 1:33	9/11/22 1:58	25	YES	25	Bypass necessary to protect plant equipment.	N/A
Line 5	SV127	NOx/SO2	9/11/22 21:54	9/11/22 22:59	65	YES	65	Bypass necessary to protect plant equipment.	N/A
Line 5	SV127	NOx/SO2	9/14/22 9:59	9/14/22 14:30	271	YES	271	Bypass necessary to protect plant equipment.	N/A

5) Monitor Bypasses: Provide the following information for each period in which an emission unit is operating but is not being monitored because emissions were either partially or totally diverted around the monitoring system See Minn. R. 7017.1110 subp. 2c

[Fa)	[Fh)	T = 1	T ==1\	F-\	T 50	r		7	
5a) Monitor ID number	5b) Emission Unit Required to be Monitored	5c) Pollutant and Limit Required to be Monitored	5d) Beginning Date and Time of Bypass Period	5e) End date and time of bypass period	5f) Duration of monitor bypass (minutes)	5g) Was P.C.E. operating during bypass period?	5h) Duration of allowable monitor bypass	5i) Reason for monitor bypass (clarifying comments)	5j) Corrective action taken (clarifying comments)
Line 5	SV127	NOx/SO2	9/14/22 14:30	9/14/22 22:30	480	YES	480	Bypass necessary to protect plant equipment.	N/A
Line 5	SV127	NOx/SO2	9/14/22 22:30	9/15/22 6:30	480	YES	480	Bypass necessary to protect plant equipment.	N/A
Line 5	SV127	NOx/SO2	9/15/22 6:30	9/15/22 14:30	480	YES	480	Bypass necessary to protect plant equipment.	N/A
Line 5	SV127	NOx/SO2	9/15/22 14:30	9/15/22 15:52	82	YES	82	Bypass necessary to protect plant equipment.	N/A
Line 5	SV127	NOx/SO2	9/15/22 15:55	9/15/22 16:11	16	YES	16	Bypass necessary to protect plant equipment.	N/A
Line 5	SV127	NOx/SO2	9/16/22 7:56	9/16/22 8:50	54	YES	54	Bypass necessary to protect plant equipment.	N/A
Line 5	SV127	NOx/SO2	9/20/22 3:37	9/20/22 6:20	163	YES	163	Bypass necessary to protect plant equipment.	N/A
Line 5	SV127	NOx/SO2	9/23/22 4:29	9/23/22 6:30	121	YES	121	Bypass necessary to protect plant equipment.	N/A
Line 5	SV127	NOx/SO2	9/23/22 6:30	9/23/22 10:09	219	YES	219	Bypass necessary to protect plant equipment.	N/A
Line 6	SV144	NOx/SO2	7/1/22 9:06	7/1/22 9:48	42	YES	42	Bypass necessary to protect plant equipment.	N/A
Line 6	SV144	NOx/SO2	7/2/22 18:25	7/2/22 19:40	75	YES	75	Bypass necessary to protect plant equipment.	N/A
Line 6	SV144	NOx/SO2	7/2/22 19:52	7/2/22 22:30	158	YES	158	Bypass necessary to protect plant equipment.	N/A
Line 6	SV144	NOx/SO2	7/2/22 22:30	7/2/22 23:18	48	YES	48	Bypass necessary to protect plant equipment.	N/A
Line 6	SV144	NOx/SO2	7/7/22 3:22	7/7/22 3:34	12	YES	12	Bypass necessary to protect plant equipment.	N/A
Line 6	SV144	NOx/SO2	7/8/22 10:09	7/8/22 12:06	118	YES	118	Bypass necessary to protect plant equipment.	N/A
Line 6	SV144	NOx/SO2	7/21/22 11:16	7/21/22 11:45	29	YES	29	Bypass necessary to protect plant equipment.	N/A
Line 6	SV144	NOx/SO2	7/22/22 9:27	7/22/22 14:22	295	YES	295	Bypass necessary to protect plant equipment.	N/A
Line 6	SV144	NOx/SO2	7/25/22 7:07	7/25/22 11:24	256	YES	256	Bypass necessary to protect plant equipment.	N/A
Line 6	SV144	NOx/SO2	7/25/22 11:48	7/25/22 13:48	120	YES	120	Bypass necessary to protect plant equipment.	N/A
Line 6	SV144	NOx/SO2	7/27/22 17:47	7/27/22 18:10	23	YES	23	Bypass necessary to protect plant equipment.	N/A

5) Monitor Bypasses: Provide the following information for each period in which an emission unit is operating but is not being monitored because emissions were either partially or totally diverted around the monitoring system See Minn. R. 7017.1110 subp. 2c

5a)	5b)	5c)	5d)	5e)	5f)	5g)	5h)	5i)	5j)
Monitor ID number	Emission Unit Required to be Monitored	Pollutant and Limit Required to be Monitored	Beginning Date and Time of Bypass Period	End date and time of bypass period	Duration of monitor bypass (minutes)	Was P.C.E. operating during bypass period?	Duration of allowable monitor bypass	Reason for monitor bypass (clarifying comments)	Corrective action taken (clarifying comments)
Line 6	SV144	NOx/SO2	7/28/22 17:50	7/28/22 18:16	26	YES	26	Bypass necessary to protect plant equipment.	N/A
Line 6	SV144	NOx/SO2	7/28/22 18:53	7/28/22 19:10	16	YES	16	Bypass necessary to protect plant equipment.	N/A
Line 6	SV144	NOx/SO2	8/3/22 15:08	8/3/22 15:59	51	YES	51	Bypass necessary to protect plant equipment.	N/A
Line 6	SV144	NOx/SO2	8/4/22 15:36	8/4/22 16:05	29	YES	29	Bypass necessary to protect plant equipment.	N/A
Line 6	SV144	NOx/SO2	8/12/22 11:37	8/12/22 12:44	67	YES	67	Bypass necessary to protect plant equipment.	N/A
Line 6	SV144	NOx/SO2	8/13/22 11:11	8/13/22 13:24	133	YES	133	Bypass necessary to protect plant equipment.	N/A
Line 6	SV144	NOx/SO2	8/14/22 1:07	8/14/22 2:03	56	YES	56	Bypass necessary to protect plant equipment.	N/A
Line 6	SV144	NOx/SO2	8/14/22 20:29	8/14/22 20:33	4	YES	4	Bypass necessary to protect plant equipment.	N/A
Line 6	SV144	NOx/SO2	8/14/22 21:06	8/14/22 21:15	8	YES	8	Bypass necessary to protect plant equipment.	N/A
Line 6	SV144	NOx/SO2	8/14/22 23:21	8/15/22 0:02	41	YES	41	Bypass necessary to protect plant equipment.	N/A
Line 6	SV144	NOx/SO2	8/16/22 22:31	8/16/22 22:59	28	YES	28	Bypass necessary to protect plant equipment.	N/A
Line 6	SV144	NOx/SO2	8/17/22 8:59	8/17/22 14:30	480	YES	480	Bypass necessary to protect plant equipment.	N/A
Line 6	SV144	NOx/SO2	8/17/22 14:30	8/17/22 20:03	333	YES	333	Bypass necessary to protect plant equipment.	N/A
Line 6	SV144	NOx/SO2	8/18/22 7:49	8/18/22 7:59	10	YES	10	Bypass necessary to protect plant equipment.	N/A
Line 6	SV144	NOx/SO2	8/19/22 21:31	8/19/22 21:52	21	YES	21	Bypass necessary to protect plant equipment.	N/A
Line 6	SV144	NOx/SO2	8/20/22 16:04	8/20/22 16:11	6	YES	6	Bypass necessary to protect plant equipment.	N/A
Line 6	SV144	NOx/SO2	8/20/22 16:17	8/20/22 17:47	90	YES	90	Bypass necessary to protect plant equipment.	N/A
Line 6	SV144	NOx/SO2	8/24/22 10:25	8/24/22 12:17	112	YES	112	Bypass necessary to protect plant equipment.	N/A
Line 6	SV144	NOx/SO2	8/31/22 2:50	8/31/22 6:30	220	YES	220	Bypass necessary to protect plant equipment.	N/A
Line 6	SV144	NOx/SO2	8/31/22 6:30	8/31/22 14:30	480	YES	480	Bypass necessary to protect plant equipment.	N/A

5) Monitor Bypasses: Provide the following information for each period in which an emission unit is operating but is not being monitored because emissions were either partially or totally diverted around the monitoring system See Minn. R. 7017.1110 subp. 2c

Monitor Emission Unit Dim Pollutant and ID	5a)	5b)	5c)	5d)	5e)	5f)	5g)	5h)	5i)	5j)
Care	Jaj	30)	36)	Ju)	36)				31)	
Commerce	Monitor	Emission Unit	Pollutant and	Beginning Date	End date and		The state of the s		Reason for monitor	
Line 6 SV144 NOwSO2 8/31/22 21:10 8/31/22 22:30 79 YES 370 Spyass necessary to protect plant or protect pla	ID	Required to be	Limit Required	and Time of	time of bypass			La company of the first of the control of the contr	bypass (clarifying	
Line 6 SV144	number	Monitored	to be Monitored	Bypass Period	period			100		
Line 6 SV144 NOwSO2 8/31/22 21:10 8/31/22 22:30 79 YES 79 Pygasa necessary to protect plant equipment. N/A equipment N/A				71		(minutes)	period?	bypass	,	comments)
Line 6 SV144 NOx/SO2 8/31/22 21:10 8/31/22 22:30 79 YES 79 9/3938 necessary to protect plant optical plant opt										
Line 6	Line 6	SV144	NOx/SO2	8/31/22 14:30	8/31/22 20:40	370	YES	370	to protect plant	N/A
Line 6 SV144 NOx/SO2 8/31/22 22:30 8/31/22 22:30 9 YES 79 to protect plant equipment. N/A equipment. N/A									equipment.	
Line 6 SV144 NOx/SO2 8/31/22 22:30 8/31/22 22:39 9 YES 9 Sypasa Rocessary to protect plant option plant									Bypass necessary	
Line 6 SV144 NOx/SO2 8/31/22 22:39 9 YES 9 Sypass necessary to protect plant optotect plant opt	Line 6	SV144	NOx/SO2	8/31/22 21:10	8/31/22 22:30	79	YES	79	to protect plant	N/A
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Line 6 SV144 NOx/SO2 9/16/22 19:02 9/16/22 21:59 177 YES 177 to protect plant equipment. Line 6 SV144 NOx/SO2 9/17/22 0:59 9/17/22 8:19 440 YES 440 Bypass necessary to protect plant equipment. Line 6 SV144 NOx/SO2 9/17/22 9:04 9/17/22 11:19 135 YES 135 Bypass necessary to protect plant equipment. Line 6 SV144 NOx/SO2 9/17/22 12:00 9/17/22 13:03 63 YES 63 Bypass necessary to protect plant equipment. Bypass necessary to protect plant equipment. N/A Bypass necessary to protect plant equipment. Bypass necessary to protect plant equipment. Bypass necessary to protect plant equipment. N/A Bypass necessary to protect plant equipment. Bypass necessary to protect plant equipment. N/A Bypass necessary to protect plant equipment. Bypass necessary to protect plant equipment. N/A Bypass necessary to protect plant equipment. Bypass necessary to protect plant equipment. N/A										
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Line 6 SV144 NOx/SO2 9/17/22 0:59 9/17/22 8:19 440 YES 440 Bypass necessary to protect plant equipment. Line 6 SV144 NOx/SO2 9/17/22 9:04 9/17/22 11:19 135 YES 135 Bypass necessary to protect plant equipment. Line 6 SV144 NOx/SO2 9/17/22 12:00 9/17/22 13:03 63 YES 63 Bypass necessary to protect plant equipment. Line 6 SV144 NOx/SO2 9/17/22 12:00 9/17/22 13:03 63 YES 63 Bypass necessary to protect plant equipment. Bypass necessary to protect plant equipment. N/A Bypass necessary to protect plant equipment. Bypass necessary to protect plant equipment. N/A	Line 6	SV144	NOx/SO2	9/16/22 19:02	9/16/22 21:59	177	YES	177	to protect plant	N/A
Line 6 SV144 NOx/SO2 9/17/22 0:59 9/17/22 8:19 440 YES 440 to protect plant equipment. Line 6 SV144 NOx/SO2 9/17/22 9:04 9/17/22 11:19 135 YES 135 Bypass necessary to protect plant equipment. Line 6 SV144 NOx/SO2 9/17/22 12:00 9/17/22 13:03 63 YES 63 Bypass necessary to protect plant equipment. Line 6 SV144 NOx/SO2 9/17/22 12:00 9/17/22 13:03 63 YES 63 Bypass necessary to protect plant equipment. N/A									equipment.	
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Line 6 SV144 NOx/SO2 9/17/22 9:04 9/17/22 11:19 135 YES 135 Bypass necessary to protect plant equipment. Line 6 SV144 NOx/SO2 9/17/22 12:00 9/17/22 13:03 63 YES 63 Bypass necessary to protect plant equipment. Line 6 SV144 NOx/SO2 9/17/22 12:00 9/17/22 13:03 63 YES 63 Bypass necessary to protect plant equipment. Bypass necessary to protect plant equipment. Bypass necessary to protect plant t	Line 6	SV144	NOx/SO2	9/17/22 0:59	9/17/22 8:19	440	YES	440		N/A
Line 6 SV144 NOx/SO2 9/17/22 9:04 9/17/22 11:19 135 YES 135 Bypass necessary to protect plant equipment. Line 6 SV144 NOx/SO2 9/17/22 12:00 9/17/22 13:03 63 YES 63 Bypass necessary to protect plant equipment. Line 6 SV144 NOx/SO2 9/17/22 12:00 9/17/22 13:03 63 YES 63 Bypass necessary to protect plant equipment. Bypass necessary to protect plant to protect pl										
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Line 6 SV144 NOx/SO2 9/17/22 12:00 9/17/22 13:03 63 YES 63 Bypass necessary to protect plant equipment. Line 6 SV144 NOx/SO2 9/17/22 12:00 9/17/22 13:03 63 YES 63 Bypass necessary to protect plant of the protect plant	Line 6	SV144	NOx/SO2	9/17/22 9:04	9/17/22 11:19	135	YFS	135		N/A
Line 6 SV144 NOx/SO2 9/17/22 12:00 9/17/22 13:03 63 YES 63 Bypass necessary to protect plant equipment. Line 6 SV144 NOx/SO2 9/17/22 12:00 9/17/22 13:03 63 YES 63 Bypass necessary to protect plant to protect plant to protect plant N/A		0				.50	0	.00		17/7
Line 6 SV144 NOx/SO2 9/17/22 12:00 9/17/22 13:03 63 YES 63 to protect plant equipment. Line 6 SV144 NOx/SO2 9/17/22 12:00 9/17/22 13:03 63 YES 63 to protect plant by pass necessary to protect plant N/A	 									
Line 6 SV144 NOx/SO2 9/17/22 12:00 9/17/22 13:03 63 YES 63 to protect plant N/A	Line 6	21/1/4	NOVEOS	0/17/22 12:00	0/17/22 12:02	62	VEC	62		N1/A
Line 6 SV144 NOx/SO2 9/17/22 12:00 9/17/22 13:03 63 YES 63 Bypass necessary to protect plant N/A	Line 6	SV144	NOX/502	9/1//22 12:00	9/1//22 13:03	03	159	03		N/A
Line 6 SV144 NOx/SO2 9/17/22 12:00 9/17/22 13:03 63 YES 63 to protect plant N/A										
	,	0.444	NO 1005	047/00 10	0117100 10 55		\/=0			
equipment.	Line 6	SV144	NOx/SO2	9/17/22 12:00	9/17/22 13:03	63	YES	63		N/A
									equipment.	

5) Monitor Bypasses: Provide the following information for each period in which an emission unit is operating but is not being monitored because emissions were either partially or totally diverted around the monitoring system See Minn. R. 7017.1110 subp. 2c

5a)	5b)	5c)	5d)	5e)	5f)	5g)	5h)	5i)	5j)
Manitan	Emission Unit	Dellutant and	Designing Date	End data and	Duration of	Was P.C.E.	Duration of	Doggan for monitor	Corrective
Monitor	Emission Unit	Pollutant and	Beginning Date	End date and	monitor	operating	allowable	Reason for monitor	action taken
ID	Required to be	Limit Required	and Time of	time of bypass	bypass	during bypass	monitor	bypass (clarifying	(clarifying
number	Monitored	to be Monitored	Bypass Period	period	(minutes)	period?	bypass	comments)	comments)
Line 6	SV144	NOx/SO2	9/22/22 6:36	9/22/22 11:16	279	YES	279	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	7/2/22 19:52	7/2/22 22:30	158	YES	158	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	7/2/22 22:30	7/2/22 22:43	13	YES	13	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	7/3/22 21:23	7/3/22 21:40	16	YES	16	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	7/5/22 22:08	7/5/22 22:30	22	YES	22	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	7/5/22 22:30	7/5/22 23:41	71	YES	71	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	7/6/22 10:03	7/6/22 11:12	69	YES	69	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	7/8/22 10:12	7/8/22 12:21	130	YES	130	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	7/25/22 7:09	7/25/22 11:24	255	YES	255	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	7/25/22 14:30	7/25/22 19:59	329	YES	329	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	7/27/22 8:59	7/27/22 14:30	331	YES	331	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	7/27/22 14:30	7/27/22 22:30	480	YES	480	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	7/27/22 22:30	7/28/22 6:30	480	YES	480	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	7/28/22 6:30	7/28/22 9:20	170	YES	170	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	7/29/22 10:46	7/29/22 10:57	11	YES	11	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	8/1/22 3:33	8/1/22 3:41	8	YES	8	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	8/14/22 23:22	8/15/22 0:31	69	YES	69	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	8/16/22 7:14	8/16/22 14:03	409	YES	409	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	9/2/22 7:22	9/2/22 8:38	75	YES	75	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	9/3/22 4:09	9/3/22 6:30	140	YES	140	Bypass necessary to protect plant equipment.	N/A

5) Monitor Bypasses: Provide the following information for each period in which an emission unit is operating but is not being monitored because emissions were either partially or totally diverted around the monitoring system See Minn. R. 7017.1110 subp. 2c

5a)	5b)	5c)	5d)	5e)	5f)	5g)	5h)	5i)	5j)
NA	England and Malt	D-II. to at a ad	Danissis Data		Duration of	Was P.C.E.	Duration of	D	Corrective
Monitor	Emission Unit	Pollutant and	Beginning Date	End date and	monitor	operating	allowable	Reason for monitor	action taken
ID	Required to be	Limit Required	and Time of	time of bypass	bypass	during bypass	monitor	bypass (clarifying	(clarifying
number	Monitored	to be Monitored	Bypass Period	period	(minutes)	period?	bypass	comments)	comments)
Line 7	SV151	NOx/SO2	9/3/22 6:30	9/3/22 12:46	376	YES	376	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	9/3/22 15:22	9/3/22 15:32	9	YES	9	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	9/3/22 15:39	9/3/22 16:05	25	YES	25	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	9/6/22 5:12	9/6/22 5:37	25	YES	25	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	9/16/22 1:46	9/16/22 1:53	8	YES	8	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	9/16/22 4:49	9/16/22 4:59	11	YES	11	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	9/16/22 7:35	9/16/22 9:37	121	YES	121	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	9/16/22 19:02	9/16/22 20:59	117	YES	117	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	9/17/22 0:59	9/17/22 9:00	481	YES	481	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	9/17/22 10:32	9/17/22 10:45	13	YES	13	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	9/17/22 21:54	9/17/22 22:30	36	YES	36	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	9/18/22 17:31	9/18/22 18:07	36	YES	36	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	9/20/22 0:43	9/20/22 1:56	73	YES	73	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	9/20/22 7:20	9/20/22 7:29	9	YES	9	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	9/20/22 7:32	9/20/22 14:30	418	YES	418	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	9/20/22 14:30	9/20/22 16:44	134	YES	134	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	9/22/22 6:38	9/22/22 10:36	239	YES	239	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	9/24/22 3:27	9/24/22 3:38	12	YES	12	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	9/24/22 5:03	9/24/22 6:30	87	YES	87	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	9/24/22 6:30	9/24/22 8:59	149	YES	149	Bypass necessary to protect plant equipment.	N/A

5) Monitor Bypasses: Provide the following information for each period in which an emission unit is operating but is not being monitored because emissions were either partially or totally diverted around the monitoring system See Minn. R. 7017.1110 subp. 2c

5a)	5b)	5c)	5d)	5e)	5f)	5g)	5h)	5i)	5j)
Monitor ID number	Emission Unit Required to be Monitored	Pollutant and Limit Required to be Monitored	Beginning Date and Time of Bypass Period	End date and time of bypass period	Duration of monitor bypass (minutes)	Was P.C.E. operating during bypass period?	Duration of allowable monitor bypass	Reason for monitor bypass (clarifying comments)	Corrective action taken (clarifying comments)
Line 7	SV151	NOx/SO2	9/26/22 3:34	9/26/22 3:48	14	YES	14	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	9/26/22 4:25	9/26/22 4:43	18	YES	18	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	9/26/22 4:58	9/26/22 6:30	92	YES	92	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	9/26/22 6:30	9/26/22 10:55	265	YES	265	Bypass necessary to protect plant equipment.	N/A
Line 7	SV151	NOx/SO2	9/28/22 10:03	9/28/22 10:10	6	YES	6	Bypass necessary to protect plant equipment.	N/A
			5k) Total d	uration of allow	able monitor	bypass:	468	hours	

6) CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

12/2	Lukas Klemke
Signature of Responsible Official	Printed Name of Responsible Official
Plant Manager - Minnesota Ore	October 27, 2022
Title	Date

COMS audits

COMS at								
Subject item	Operating hours	Monitor ID	Pollutant	Last audit date	Cal error results	Pass/fail	Next test due by:	Comments
					***************************************	-		
N/A								
	gas audit'	s (CGA)						
Emission unit	Operating hours	Monitor ID	Pollutant	Last audit date	Cal error results	Pass/fail	Next test due by:	Comments
SV103	2119	MR001	NOx	8/23/2022	Low 0.469 Mid 0.879	ó	12/31/2022	
					Low 0.94%	6		
SV118	2125	MR002	NOx	8/23/2022	Mid 0.10% Low 1.51%	5	12/31/2022	
SV127	2134	MR003	NOx	8/23/2022	Mid 0.17% Low 0.92%	5	12/31/2022	
SV144	2195	MR004	NOx	8/24/2022	Mid 0.86% Low 0.43%		12/31/2022	
SV151	2166	MR005	NOx	8/24/2022	Mid 0.53%	Pass	12/31/2022	
SV103	2119	MR001	SO2	8/23/2022	Low 10.07% Mid 3.34%	Pass	12/31/2022	
SV118	2125	MR002	SO2	8/23/2022	Low 5.62% Mid 2.73%	Pass	12/31/2022	
SV127	2134	MR003	SO2	8/23/2022	Low 5.10% Mid 1.34%	Pass	12/31/2022	
SV144	2195	MR004	SO2	8/24/2022	Low 5.62% Mid 2.78%		12/31/2022	
	2166	MR005	SO2		Low 0.65% Mid 0.18%			
SV151	12100	IMROUS	302	8/24/2022	IVIIQ 0.1876	Pass	12/31/2022	
Linearity	/							
Emission unit	Operating hours	Monitor ID	Pollutant	Last audit date	Cal error results	Pass/fail	Next test due by:	Comments
				uuto	Low	i usonun	duc by.	Comments
N/A	<u></u>				Mid High			
		est audit (F	RATA)	T	T=		Ţ	<u></u>
Emission unit	Operating hours	Monitor ID	Pollutant	Last audit date	Relative accuracy	Pass/fail	Next test due by:	Comments
SV103		MR001	SO2	5/26/2022	2.6%	Pass	2nd Qtr 2023	
SV103		MR001	NOx	5/26/2022	13.6%	Pass	2nd Qtr 2023	
		IMITOOT	INOX	SIZGIZGZZ	10.070	1 033	Zild Qil 2023	
SV118		MR002	S02	6/1/2022	9.4%	Pass	2nd Qtr 2023	
SV118		MR002	NOx	6/1/2022	11.7%	Pass	2nd Qtr 2023	
SV127		MR003	SO2	6/3/2022	3.0%	Pass	2nd Otr 2022	
0 1 1 2 1		IWITOOS	302	0/3/2022	3.076	P 455	2nd Qtr 2023	
SV127		MR003	NOx	6/3/2022	12.5%	Pass	2nd Qtr 2023	
SV144	-	MR004	SO2	5/25/2022	10.1%	Pass	2nd Qtr 2023	
SV144		MP004	NOv	E/2E/2022	12 00/	Door	2-4 01-2002	
SV144		MR004	NOx	5/25/2022	13.9%	Pass	2nd Qtr 2023	
SV151		MR005	SO2	5/24/2022	3.3%	Pass	2nd Qtr 2023	
SV151		MR005	NOx	5/24/2022	10.1%	Pass	2nd Qtr 2023	

Location: ,

SO2 LINE_7 Audit Test Results

Mfr. & Model: AMETEK 920 SO2 NOX

Serial Number: ZA-920-10336-2

Test Date: 8/24/2022

Tester: Ryan Hei

Analyzer Span: 100.000 PPMW

	Low	Mid
Reference Target	20 - 30% of Span	50 - 60% of Span
Range	(20.000 PPMW - 30.000 PPMW)	(50.000 PPMW - 60.000 PPMW)
Concentration	25.500	55.100
Cylinder No	CC417095	CC743793
Expiration Date	10/23/2023	12/7/2029

	Lo	ow	Mid		
	Time	Monitor Value	Time	Monitor Value	
Run 1	09:08	26.000	09:11	55.000	
Run 2	09:20	25.000	09:23	55.000	
Run 3	09:32	25.000	09:35	55.000	
Avg Monitor Response		25.333		55.000	
Calibration Error		0.65		0.18	
Absolute Diff		0.167		0.100	
Test Status		PASSED		PASSED	

Avg. Monitor Response - Cal. Gas Concentration

Calibration Error = _______X 100

Cal. Gas Concentration

Location:,

NOX LINE_7 Audit Test Results

Mfr. & Model: AMETEK 920 SO2 NOX

Serial Number: ZA-920-10336-2

Test Date: 8/24/2022

Tester: Ryan Hei

Analyzer Span: 500.000 PPMW

	Low	Mid
Reference Target	20 - 30% of Span	50 - 60% of Span
Range	(100.000 PPMW - 150.000 PPMW)	(250.000 PPMW - 300.000 PPMW)
Concentration	123.800	277.800
Cylinder No	CC417095	CC743793
Expiration Date	10/23/2023	12/7/2029

	Lo	ow	Mid		
	Time	Monitor Value	Time	Monitor Value	
Run 1	09:08	124.000	09:11	275.000	
Run 2	09:20	123.000	09:23	277.000	
Run 3	09:32	126.000	09:35	277.000	
Avg Monitor Response		124.333		276.333	
Calibration Error		0.43		0.53	
Absolute Diff		0.533		1.467	
Test Status		PASSED		PASSED	

Avg. Monitor Response - Cal. Gas Concentration

Calibration Error = ______X 100

Cal. Gas Concentration

Location: ,

SO2 LINE_6 Audit Test Results

Mfr. & Model: AMETEK 920 SO2 NOX

Serial Number: ZA-920-10336-1

Test Date: 8/24/2022

Tester: Ryan Hei

Analyzer Span: 100.000 PPMW

	Low	Mid
Reference Target	20 - 30% of Span	50 - 60% of Span
Range	(20.000 PPMW - 30.000 PPMW)	(50.000 PPMW - 60.000 PPMW)
Concentration	25.500	55.100
Cylinder No	CC417095	CC743793
Expiration Date	10/23/2023	12/7/2029

	Low		Mid	
	Time	Monitor Value	Time	Monitor Value
Run 1	08:08	23.500	08:11	50.100
Run 2	08:20	23.600	08:23	54.400
Run 3	08:32	25.100	08:35	56.200
Avg Monitor Response		24.067		53.567
Calibration Error		5.62		2.78
Absolute Diff		1.433		1.533
Test Status		PASSED		PASSED

Avg. Monitor Response - Cal. Gas Concentration

Calibration Error = ______X 100

Cal. Gas Concentration

Location: ,

NOX LINE_6 Audit Test Results

Mfr. & Model: AMETEK 920 SO2 NOX

Serial Number: ZA-920-10336-1

Test Date: 8/24/2022

Tester: Ryan Hei

Analyzer Span: 500.000 PPMW

	Low	Mid
Reference Target	20 - 30% of Span	50 - 60% of Span
Range	(100.000 PPMW - 150.000 PPMW)	(250.000 PPMW - 300.000 PPMW)
Concentration	123.800	277.800
Cylinder No	CC417095	CC743793
Expiration Date	10/23/2023	12/7/2029

	Lo	ow.	Mid		
	Time	Monitor Value	Time	Monitor Value	
Run 1	08:08	121.900	08:11	270.800	
Run 2	08:20	123.100	08:23	279.900	
Run 3	08:32	123.000	08:35	275.500	
Avg Monitor Response		122.667		275.400	
Calibration Error		0.92		0.86	
Absolute Diff		1.133		2.400	
Test Status		PASSED	Market Eller on Agent and Commission of Comm	PASSED	

Avg. Monitor Response - Cal. Gas Concentration	
Calibration Error =X 10	00
Cal. Gas Concentration	

Location: ,

SO2 LINE_5 Audit Test Results

Mfr. & Model: AMETEK 920 S02 NOX

Serial Number: AX-920-9640-3

Test Date: 8/23/2022

Tester: Ryan Hei

Analyzer Span: 100.000 PPMW

	Low	Mid
Reference Target	20 - 30% of Span	50 - 60% of Span
Range	(20.000 PPMW - 30.000 PPMW)	(50.000 PPMW - 60.000 PPMW)
Concentration	25.500	54.900
Cylinder No	CC257218	CC743784
Expiration Date	10/23/2023	12/7/2029

	Low		Mid	
	Time	Monitor Value	Time	Monitor Value
Run 1	10:24	23.900	10:28	53.700
Run 2	10:36	24.400	10:40	53.700
Run 3	10:49	24.300	10:53	55.100
Avg Monitor Response		24.200		54.167
Calibration Error		5.10		1.34
Absolute Diff		1.300		0.733
Test Status	A CONTRACTOR OF THE CONTRACTOR	PASSED		PASSED

Avg. Monitor Response - Cal. Gas Concentration

Calibration Error = _______X 100

Cal. Gas Concentration

Location:,

NOX LINE_5 Audit Test Results

Mfr. & Model: AMETEK 920 SO2 NOX

Serial Number: AX-920-9640-3

Test Date: 8/23/2022

Tester: Ryan Hei

Analyzer Span: 500.000 PPMW

	Low	Mid
Reference Target	20 - 30% of Span	50 - 60% of Span
Range	(100.000 PPMW - 150.000 PPMW)	(250.000 PPMW - 300.000 PPMW)
Concentration	123.800	277.300
Cylinder No	CC257218	CC743784
Expiration Date	10/23/2023	12/7/2029

	Low		M	id
	Time	Monitor Value	Time	Monitor Value
Run 1	10:24	127.100	10:28	278.200
Run 2	10:36	125.200	10:40	277.300
Run 3	10:49	124.700	10:53	277.800
Avg Monitor Response		125.667		277.767
Calibration Error		1.51		0.17
Absolute Diff		1.867		0.467
Test Status		PASSED		PASSED

Avg. Monitor Response - Cal. Gas Concentration

Calibration Error = _______X 100

Cal. Gas Concentration

Location:,

SO2 LINE_4 Audit Test Results

Mfr. & Model: AMETEK 920 SO2 NOX

Serial Number: AX-920-9640-2

Test Date: 8/23/2022

Tester: Ryan Hei

Analyzer Span: 100.000 PPMW

	Low	Mid
Reference Target	20 - 30% of Span	50 - 60% of Span
Range	(20.000 PPMW - 30.000 PPMW)	(50.000 PPMW - 60.000 PPMW)
Concentration	25.500	54.900
Cylinder No	CC257218	CC743784
Expiration Date	10/23/2023	12/7/2029

	Lo	Low		id .
	Time	Monitor Value	Time	Monitor Value
Run 1	09:19	24.100	09:23	53.700
Run 2	09:32	23.700	09:36	54.200
Run 3	09:43	24.400	09:47	52.300
Avg Monitor Response		24.067		53.400
Calibration Error		5.62	Apple to the second of the sec	2.73
Absolute Diff		1.433		1.500
Test Status		PASSED		PASSED

Avg. Monitor Response - Cal. Gas Concentration

Calibration Error = ______X 100

Cal. Gas Concentration

Location:,

NOX LINE_4 Audit Test Results

Mfr. & Model: AMETEK 920 SO2 NOX

Serial Number: AX-920-9640-2

Test Date: 8/23/2022

Tester: Ryan Hei

Analyzer Span: 500.000 PPMW

	Low	Mid
Reference Target	20 - 30% of Span	50 - 60% of Span
Range	(100.000 PPMW - 150.000 PPMW)	(250.000 PPMW - 300.000 PPMW)
Concentration	123.800	277.300
Cylinder No	CC257218	CC743784
Expiration Date	10/23/2023	12/7/2029

	Low		M	id
	Time	Monitor Value	Time	Monitor Value
Run 1	09:19	123.300	09:23	278.500
Run 2	09:32	123.000	09:36	275.400
Run 3	09:43	121.600	09:47	277.200
Avg Monitor Response		122.633	galantina mangang mengangan pada dan pada pada pada pada pada pad	277.033
Calibration Error		0.94		0.10
Absolute Diff		1.167		0.267
Test Status		PASSED		PASSED

Calibration Error = Avg. Monitor Response - Cal. Gas Concentration

Cal. Gas Concentration

Location:,

SO2 LINE_3 Audit Test Results

Mfr. & Model: AMETEK 920 SO2 NOX

Serial Number: AX-920-9640-1

Test Date: 8/23/2022

Tester: kevin maxie

Analyzer Span: 100.000 PPMW

	Low	Mid
Reference Target	20 - 30% of Span	50 - 60% of Span
Range	(20.000 PPMW - 30.000 PPMW)	(50.000 PPMW - 60.000 PPMW)
Concentration	25.500	54.900
Cylinder No	CC257218	CC743784
Expiration Date	10/23/2023	12/7/2029

	Lo	Low		îd
	Time	Monitor Value	Time	Monitor Value
Run 1	08:09	27.100	08:13	56.200
Run 2	08:22	29.600	08:26	57.800
Run 3	08:35	27.500	08:39	56.200
Avg Monitor Response		28.067		56.733
Calibration Error		10.07		3.34
Absolute Diff		2.567		1.833
Test Status	The second secon	PASSED	A STATE OF THE PARTY OF THE PAR	PASSED

Calibration Error = Avg. Monitor Response - Cal. Gas Concentration

Cal. Gas Concentration

Location: ,

NOX LINE_3 Audit Test Results

Mfr. & Model: AMETEK 920 SO2 NOX

Serial Number: AX-920-9640-1

Test Date: 8/23/2022

Tester: Kevin Maxie

Analyzer Span: 500.000 PPMW

	Low	Mid
Reference Target	20 - 30% of Span	50 - 60% of Span
Range	(100.000 PPMW - 150.000 PPMW)	(250.000 PPMW - 300.000 PPMW)
Concentration	123.800	277.300
Cylinder No	CC257218	CC743784
Expiration Date	10/23/2023	12/7/2029

	Lo	Low		id
	Time	Monitor Value	Time	Monitor Value
Run 1	08:09	123.200	08:13	274.900
Run 2	08:22	125.100	08;26	274.900
Run 3	08:35	124.800	08:39	274.900
Avg Monitor Response		124.367		274.900
Calibration Error		0.46		0.87
Absolute Diff		0.567		2.400
Test Status		PASSED		PASSED

	Avg. Monitor Response - Cal. Gas Concentration	
Calibration Error =	X	100
	Cal Gas Concentration	

Summary Table by Monitor Downtime Type U. S. Steel - Minntac 3rd Quarter 2022

NOx

Line 3 12 Automatic Calibration 0 Data Handling System Malfunction 0 Excess Drift Ancillary Analyzer 11 Excess Drift Primary Analyzer 20 Primary Analyzer Malfunction 1 Preventative Maintenance 0 Sample Interface Malfunction Line 4 4 4 Automatic Calibration 0 Excess Drift Ancillary Analyzer 15 Excess Drift Primary Analyzer 1 Preventative Maintenance 1 Sample Interface Malfunction 2 3 4 Automatic Calibration 5 3 4 Automatic Calibration 5 3 4 Automatic Calibration 5 0 5 3 4 4 5 3 6 4 6 3 7 4 8 4 9 4 10	Line	Duration (Hrs)	Description
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1		20	
Sample Interface Malfunction			
Line 4 4 Automatic Calibration 0 Data Handling System Malfunction 0 Excess Drift Ancillary Analyzer 15 Excess Drift Primary Analyzer 1 Preventative Maintenance 1 Sample Interface Malfunction 11 Primary Analyzer Malfunction Line 5 3 Automatic Calibration 0 Data Handling System Malfunction 0 Secondary Analyzer Malfunction 1 Excess Drift Primary Analyzer 0 Sample Interface Malfunction 0 Primary Analyzer Malfunction 0 Excess Drift Primary Analyzer 3 Primary Analyzer Malfunction 0 Excess Drift Primary Analyzer 3 Primary Analyzer Malfunction 0 Sample Interface Malfunction 0 Sample Interface Malfunction 0 Data Handling System Malfunction 0 Data Handling System Malfunction 0 Secondary Analyzer Malfunction 0 Secondary Analyzer Malfunction 0 Secondary A		0	
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6 Primary Analyzer Malfunction 0 Sample Interface Malfunction			Excess Drift Primary Analyzer
		6	Primary Analyzer Malfunction
0 Preventative Maintenance			
		0	Preventative Maintenance

SO2

Line	Duration (Hrs)	Description
Line 3	20	Automatic Calibration
	0	Data Handling System Malfunction
	0	Excess Drift Ancillary Analyzer
	27	Excess Drift Primary Analyzer
	0	Sample Interface Malfunction
	1	Preventative Maintenance
	29	Primary Analyzer Malfunction
Line 4	8	Automatic Calibration
	0	Data Handling System Malfunction
	0	Excess Drift Ancillary Analyzer
	37	Excess Drift Primary Analyzer
	21	Primary Analyzer Malfunction
	1	Sample Interface Malfunction
	0	Preventative Maintenance
Line 5	6	Automatic Calibration
	0	Data Handling System Malfunction
	0	Secondary Analyzer Malfunction
	26	Excess Drift Primary Analyzer
	0	Sample Interface Malfunction
	4	Primary Analyzer Malfunction
	0	Preventative Maintenance
Line 6	11	Automatic Calibration
	0	Data Handling System Malfunction
	0	Secondary Analyzer Malfunction
	14	Excess Drift Primary Analyzer
	2	Primary Analyzer Malfunction
	19	Preventative Maintenance
	0	Sample Interface Malfunction
Line 7	0	Automatic Calibration
	0	Data Handling System Malfunction
	0	Secondary Analyzer Malfunction